Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies To Provide Spectrum-Based Services	)	WT Docket No. 02-381
	)	
2000 Biennial Regulatory Review Spectrum Aggregation Limits For Commercial Mobile Radio Services	)	WT Docket No. 01-14
	)	
Increasing Flexibility To Promote Access to and the Efficient and Intensive Use of Spectrum and the Widespread Deployment of Wireless Services, and To Facilitate Capital Formation	)	WT Docket No. 03-202

REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULE MAKING

Adopted: July 8, 2004 **Released:** September 27, 2004

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By the Commission: Chairman Powell issuing a statement; Commissioners Copps and Adelstein approving in part, dissenting in part and issuing separate statements.

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I. INTRODUCTION AND EXECUTIVE SUMMARY

1. Over the past decade, most Americans have enjoyed dynamic growth in the variety and quality of wireless service offerings available to them, as well as increased choice among facilities-based telecommunications service providers.[1] The Commission is committed to ensuring that this success is enjoyed by all Americans in all areas of the country "so far as possible."[2] This *Report and Order* adopts

[1] In its *Eighth Competition Report*, released last year, the Commission found that "[c]ontinued downward price trends, the continued expansion of mobile networks into new and existing markets, high rates of investment, and churn rates of about 30 percent, when considered together with the other metrics, demonstrate a high level of competition for mobile telephone consumers." *See* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Eighth Report*, 18 FCC Rcd 14783, 14812 ¶ 57 (2003) (*Eighth Competition Report*). The Commission also noted that 95 percent of the total U.S. population live in counties with access to three or more different mobile telephony providers, and 83 percent of the population live in counties with five or more competing mobile telephony providers. *See id.* at 14793-94, 14823 ¶¶ 18, 84.

[2] *See* 47 U.S.C. § 151 (stating that the Commission's primary mission is the promotion of "communication by wire and radio so as to make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service"); *see also* Mission Statement of the FCC Strategic Plan, available at <http://www.fcc.gov/omd/strategicplan/>.

several measures intended to increase the ability of wireless service providers to use licensed spectrum resources flexibly and efficiently to offer a variety of services in a cost-effective manner. By our actions today, we take steps to promote access to spectrum and facilitate capital formation for entities seeking to serve rural areas or improve service in rural areas.[3] We expect these decisions will facilitate the deployment of new and advanced wireless services, including broadband services, and thereby foster much-needed economic development. The actions we adopt in the *Report and Order* are derived from those proposed in the *Notice of Proposed Rule Making* in this proceeding.[4]

2. In this *Report and Order*, we modify certain regulations and policies in order to facilitate the deployment of wireless services in rural areas. Specifically, we take the following actions:

- As an initial matter, we examine the various definitions that are used to describe "rural areas" and establish the presumption that, on a going-forward basis, and unless otherwise specified in the context of specific policies or regulations governing wireless communications services, counties with a population density of 100 persons per square mile or less constitute "rural areas" for purposes of our wireless spectrum policies.

- Second, we take a close look at some of our policies affecting access to spectrum and the provision of service in rural areas. In particular, we consider our policies governing the licensing of spectrum, both with respect to initial licensing through the competitive bidding process as well as subsequent re-licensing after an authorization is returned to the Commission. We affirm that we will continue to establish licensing areas on a service-by-service (or band-by-band) basis as appropriate, based upon the flexibility that such an approach provides and our past experience in determining the initial size of service areas. We also reaffirm that when developing rules for licensing individual services, we will consider using smaller service areas in some spectrum blocks in order to encourage deployment in rural areas for the service in question.

- Third, we take steps to facilitate increased access to capital for rural licensees. We eliminate the remaining components of the cellular cross-interest rule that currently apply only in rural service areas and transition to case-by-case review for cellular transactions, while closely examining those that present a significant likelihood of substantial competitive harm in a market. We also revise our policies governing security interests in wireless licenses and permit licensees, at their option, to grant such interests to the Department of Agriculture's Rural Utilities Service (RUS), subject to the Commission's prior approval of any transfer of control.

- Fourth, we take several actions to increase licensee flexibility and permit more cost-effective coverage of rural areas. We amend our regulations to increase permissible power levels for base stations in certain wireless services that are located in rural areas or that provide coverage to

[3] This *Report and Order* takes action affecting the provision of commercial and private terrestrial wireless services. While the policies and regulations discussed herein are targeted to promote wireless services in rural areas, we note that certain of our actions will likely have broader application to non-rural areas as well.

[4] Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services, WT Docket No. 02-381, 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services, WT Docket No. 01-14, Increasing Flexibility to Promote Access to and the Efficient and Intensive Use of Spectrum and the Widespread Deployment of Wireless Services, and to Facilitate Capital Formation, WT Docket No. 03-202, *Notice of Proposed Rulemaking*, 18 FCC Rcd 20802 (2003) (*Rural NPRM*).

otherwise unserved areas. By this action, we anticipate that coverage of such areas will be more economical, as licensees may provide increased coverage of rural areas using fewer base stations and less associated infrastructure. We also amend our regulations to permit certain geographic-area licensees to provide substantial service as a means of complying with their construction requirements, thus countering existing disincentives to build out less densely populated areas.[5] Finally, we clarify our policies governing infrastructure sharing and discuss the various types of infrastructure arrangements that parties generally may enter into without the need for Commission review.

3. In the *Further Notice*, we seek to expand upon the record received in response to the *Rural NPRM* with respect to additional measures that the Commission can take in order to promote access to spectrum in rural areas. Specifically, we seek additional comment on adopting an unserved-area or "keep what you use" re-licensing process for current and future wireless services. Although evidence suggests that, on the whole, our current policies are working to provide wireless services in rural areas, the *Further Notice* asks whether there are additional measures, such as adopting a "keep what you use" approach to reclaim and re-license "unused" spectrum, that may complement existing market-based mechanisms. Among other inquiries, the *Further Notice* seeks comment on whether such measures are likely to spur the delivery of wireless services to rural areas. The *Further Notice* also seeks to build upon the *Rural NPRM* record by asking whether additional performance requirements might be appropriate for license terms subsequent to initial renewal.

II. BACKGROUND

4. One of the Commission's primary statutory obligations, as well as one of its principal public policy objectives, is to facilitate the widespread deployment of facilities-based communications services to all Americans, including those doing business in, residing in, or visiting rural areas. In December 2002, the Commission released a *Notice of Inquiry* that sought comment on the effectiveness of its existing regulatory tools in promoting service to rural areas and asked how we could modify our policies to further encourage the provision of wireless services in rural areas.[6] In a follow-up *Notice of Proposed Rule Making*, released in October 2003, the Commission sought to build upon the record developed in response to the *Rural NOI* and sought comment regarding a variety of proposals to eliminate unnecessary regulatory barriers and encourage the deployment of spectrum-based services in rural areas.[7] The *Rural NPRM* focused on measures that would increase flexibility, reduce regulatory costs of providing service to rural areas, and promote access to both spectrum and capital resources for entities seeking to provide wireless services in rural areas. Among other issues, the *Rural NPRM* sought comment on the following policies and proposals: (1) determining an appropriate definition for "rural area" for purposes of implementing Commission policies; (2) promoting access to "unused" spectrum; (3) extending a "substantial service" construction option to all geographic-area licensees; (4) determining whether geographic-area licensees should satisfy additional construction requirements after their initial

[5] We note that we do not modify the performance requirements for MDS/ITFS and 70/80/90 GHz licensees, as discussed *supra* Section III.D.1.

[6] Facilitating the Provision of Spectrum-Based Service to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services, WT Docket No. 03-281, *Notice of Inquiry*, 17 FCC Rcd 25554 (2002) (*Rural NOI*).

[7] *See generally Rural NPRM*, 18 FCC Rcd at 20808.

license term; (5) increasing power limits in rural areas for licensed services; (6) evaluating the appropriate initial size of licensing areas for geographic-area licenses; (7) fostering our partnership with RUS and determining whether additional measures should be taken to complement the RUS loan programs; (8) considering whether to modify long-held restrictive policies on security interests in licenses by permitting licensees to offer RUS security interests in their licenses; (9) considering modification or elimination of the cellular cross-interest rule in Rural Service Areas (RSAs); (10) clarifying our policies with respect to infrastructure sharing; and (11) updating and amending our rules governing the Rural Radiotelephone Service (RRS) and Basic Exchange Telephone Radio Systems (BETRS).

5. In response to the *Rural NPRM*, we received 30 comments and 20 reply comments.[8] Of these comments, many indicated that our market-oriented policies have been working to promote competitive service in rural areas.[9] Further, several commenters noted that the Commission should continue to allow these market-oriented policies to work and avoid mandating additional coverage that might result in uneconomic and unsustainable deployment.[10] For example, Nextel Communications urged the Commission to avoid micromanaging the market "by mandating a range of 'spectrum access' options that look more like 'forced access.'"[11] Commenters specifically referenced the Commission's recent actions to remove regulatory barriers to spectrum leasing and noted that secondary markets should be given an opportunity to work before intervening in the marketplace to force access to spectrum.[12] We note that although we received numerous comments indicating that the rural marketplace is competitive, at least with respect to Commercial Mobile Radio Services (CMRS), we also received comments to the contrary.[13]

6. As discussed below, we agree with the majority of commenters that the Commission's market-oriented policies largely have been successful in promoting facilities-based competition in the rural marketplace, especially with respect to CMRS.[14] These market-oriented policies, acting in concert with more historical licensing policies, such as the cellular unserved area process,[15] have resulted in the widespread provision of wireless services, including in rural areas. As the Commission noted in the *Eighth Competition Report*, 95 percent of the total U.S. population live in counties with access to three or

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[8] In addition, 18 parties filed *ex-parte* and late-filed comments as of July 7, 2004.

[9] *See, e.g.,* AT&T Wireless Comments at 2, 6, Cingular Comments at 3-5, 9, 11, Dobson Comments at 2-5, AT&T Wireless Reply Comments at 3-4, Nextel Communications Reply Comments at 2, Western Wireless Reply Comments at 2-3.

[10] Cingular Comments at 3-4; NTCA Comments at 4, Sprint Reply Comments at 7.

[11] Nextel Communications Reply Comments at 10.

[12] Cingular Comments at 2, 4-5, 9, Dobson Comments at 2-3, 9-10; Nextel Partners Reply Comments at 7, Southern LINC Reply Comments at 10, T-Mobile Reply Comments at 3, Western Wireless Reply Comments at 12.

[13] *See* OPASTCO/RTG Reply Comments at 4.

[14] *See supra* notes 1, 9.

[15] The unserved area licensing process is discussed in more detail *infra* Section III.B.2.

more different mobile telephony providers.[16] Moreover, we are optimistic that recent Commission initiatives will encourage the further deployment of new and advanced wireless services in rural areas, including broadband services. For example, our *Secondary Markets Report and Order* adopted rules and policies to facilitate broad access to spectrum resources by enabling a wide array of facilities-based providers of broadband and other communications services to enter into spectrum leasing arrangements with Wireless Radio Service licensees.[17] Other ongoing initiatives seek to increase licensee flexibility and promote spectrum access through the development of advanced technologies such as cognitive radios.[18] These initiatives complement existing programs and regulations that, in our estimation, already are working to promote wireless service in rural areas. These existing measures include small business bidding credits[19] and partitioning and disaggregation.[20] As the Commission noted in the *Rural NPRM,* available data indicates that wireless service providers have taken advantage of these existing regulatory mechanisms.[21] As of June 2004, the Commission has completed 39 auctions for terrestrial wireless licenses. 77 percent of the winning bidders in these auctions claimed eligibility status as a "small business" and were the winning bidder for 52 percent of the licenses sold.[22] Furthermore, within the 39 completed auctions, 12 percent of winning bidders self-certified as being rural telephone companies

[16] *See Eighth Competition Report*, 18 FCC Rcd at 14793-94 ¶ 18.

[17] Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, WT Docket No. 00-230, *Report and Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 20604 (2003) (*Secondary Markets Report and Order* and *Secondary Markets Further Notice*); Erratum, 18 FCC Rcd 24817 (2003).

[18] *See* Facilitating Opportunities for Flexible, Efficient, and Reliable Spectrum Use Employing Cognitive Radio Technologies, ET Docket No. 03-108, *Notice of Proposed Rulemaking and Order*, FCC 03-322 (2003) (*Cognitive Radio NPRM*).

[19] *See* Implementation of Section 309(j) of the Communications Act – Competitive Bidding, PP Docket No. 93-253, *Second Report and Order*, 9 FCC Rcd 2348, 2350 ¶ 6 (1994) (*Competitive Bidding Second Report and Order*); *see also* Extending Wireless Telecommunications Services to Tribal Lands, WT Docket No. 99-266, *Report and Order and Further Notice of Proposed Rulemaking*, 15 FCC Rcd 11794 (2000).

[20] Partitioning and disaggregation is permitted in the 218-219 MHz Service (47 C.F.R. § 95.823); 220 MHz Service (47 C.F.R. § 90.1019); 800 MHz (47 C.F.R. § 90.911) and 900 MHz Services (47 C.F.R. § 90.813); Specialized Mobile Radio (SMR) Service, 24 GHz Service (47 C.F.R. § 101.535); 39 GHz Service (47 C.F.R. § 101.56); Local Multipoint Distribution Service (LMDS) (47 C.F.R. §101.1111); Location and Monitoring Service (LMS) (47 C.F.R. § 90.365); Multiple Address Systems (MAS) (47 C.F.R. §101.1323); Multipoint Distribution Service (MDS) (47 C.F.R. § 21.931); Maritime Services (47 C.F.R. § 80.60); Paging and Radiotelephone Service (47 C.F.R. § 22.513); Cellular Radiotelephone Service (47 C.F.R. § 22.948); broadband Personal Communications Services (PCS) (47 C.F.R. § 24.714); narrowband PCS (47 C.F.R. § 24.104); and all Part 27 services (47 C.F.R. §§ 27.15, 27.605).

[21] *Rural NPRM*, 18 FCC Rcd at 20805 ¶ 3.

[22] For purposes of this analysis, "small businesses" includes all winning bidders that claimed eligibility status as a small or very small business for the purposes of qualifying for bidding credits. The data for this analysis was obtained from publicly available information on the Commission's Auctions website. *See* <http://wireless.fcc.gov/auctions>.

(rural telcos), as that term is defined by the Communications Act.[23] With respect to partitioning and disaggregation, the Commission's analysis of available data indicates that 13.5 percent of all assignees have voluntarily identified themselves as rural telcos.[24] In its comments, AT&T Wireless noted that it has "entered into more than a dozen partitioning or disaggregation transactions in 2003 alone, most with small entities," and that the Commission's partitioning and disaggregation rules "are working, and working well, in providing opportunities for rural carriers and speeding service to rural areas."[25] We also note that there are explicit funding programs available to support the provision of wireless services in rural areas, including Universal Service Fund support for service in high cost areas and RUS funds for the deployment of broadband services.

7. Not only has the Commission taken steps to increase licensee flexibility and promote spectrum access, we are encouraged to learn from the record in this proceeding that licensees are taking proactive measures to promote wireless deployment in rural areas. For example, Nextel Partners indicates that, in cooperation with Nextel, it provides "customers in high cost rural areas and smaller markets the same national network and the same fully integrated four-in-one bundle of services available from Nextel in urban areas."[26] Nextel Partners states that it "was established specifically for the business purpose of deploying state-of-the-art national wireless service in the smaller markets, including rural areas, and the company has grown from covering about 6,000,000 [persons] at the end of 1999 to covering more than 37,000,000 [persons] in 31 states with more than 1.05 million subscriber lines."[27] AT&T Wireless states that "it is aggressively extending its GSM/GPRS/EDGE footprint into rural markets through new construction, joint ventures, and roaming agreements with other carriers, and it has entered into numerous agreements to partition rural markets to smaller entities."[28] Dobson's comments also indicate that it is aggressively deploying wireless services in rural areas, stating that, among other efforts, it "will have invested approximately $24 million in Alaska in 2003 and 2004 to improve wireless service statewide," and that, since the release of the *Rural NOI*, it has "entered into GSM/GPRS roaming agreements with two additional nationwide carriers," such that it "is able to offer its rural and suburban customers nationwide service and will also be able to provide advanced wireless services to customers throughout the United States and perhaps the world someday."[29] Dobson states that it "recognizes the growth opportunities afforded in rural areas, and has developed its business strategy to focus on these areas."[30] Likewise, other carriers note that they have taken proactive steps to provide wireless services to

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[23] *See* 47 U.S.C. § 153(37) (defining "rural telephone company"). We note that the list of entities self-certifying as rural telcos and the list of entities that claimed eligibility as "small businesses" are not mutually exclusive.

[24] *See Rural NOI*, 17 FCC Rcd at 25559 ¶ 8.

[25] AT&T Wireless Reply Comments at 7. Not all commenters, however, agreed that our partitioning and disaggregration procedures have been successful in promoting the deployment of wireless services in rural areas. *See* OPASTCO/RTG Comments at 10-11; Blooston Comments at 11-12. We address these issues in the *Further Notice*, *see infra* Section IV.C.1 ¶¶ 147-152.

[26] Nextel Partners Comments at 2.

[27] Nextel Partners Reply Comments at 4.

[28] AT&T Wireless Reply Comments at 4.

[29] Dobson Comments at 6-7.

[30] *Id.* at 7.

rural areas, such as through joint ventures[31] and infrastructure-sharing arrangements.[32] We commend these voluntary initiatives and urge carriers and equipment providers to continue their proactive efforts to provide services to rural areas.

8. In light of the record developed in response to the *Rural NPRM*, we conclude that our market-oriented policies, in tandem with substantial capital investment by licensees, generally have led to the growth of valuable, productivity-enhancing wireless services to a vast majority of Americans, including many who reside, work, or travel in rural areas. Nevertheless, we also conclude that there are additional steps that we can take in order to promote greater deployment of wireless services in rural areas, such as eliminating disincentives to serve or invest in rural areas, and helping to reduce the costs of market entry, network deployment and continuing operations.

III. REPORT AND ORDER

A. Definition of "Rural"

9. *Background.* In the *Rural NPRM*, the Commission requested comment on an appropriate definition of a "rural area" for use in conjunction with each of the policies addressed in this proceeding.[33] The Commission sought comment on whether a uniform definition of a "rural area" would be appropriate, or whether the definition of a "rural area" should differ depending upon the particular regulatory initiative at issue.[34] The Commission discussed various definitions that are currently used by the Commission or by other federal agencies as proxies for "rural," and sought comment on whether one or more of these definitions would be appropriate.[35] Specifically, the Commission sought comment on the following potential definitions: (1) counties with a population density of 100 persons or fewer per square mile;[36] (2) RSAs;[37] (3) non-nodal counties within an Economic Area (EA) as defined by the

[31] *See* AT&T Wireless Comments at 4-5 (describing its "RoadRunner" project with Cingular, which is "designed to provide state-of-the-art GSM/GPRS/EDGE service to their customers and roamers along more than 4000 miles of select major highways in rural parts of the country").

[32] *See* Ericsson Comments at 2 (noting that Ericsson has entered into agreements with three separate rural market operators "to migrate their TDMA wireless networks to GSM through a shared infrastructure arrangement" and that these "agreements will allow these operators to deploy a full-featured GSM network with less capital and operational expenses than traditional buildouts . . . .").

[33] *See Rural NPRM*, 18 FCC at 20809-11 ¶¶ 10-12.

[34] *See id.* at ¶ 10.

[35] *See id.* at ¶ 12.

[36] *See Eighth Competition Report* at 14837 ¶ 113; *see also* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act – Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, *Seventh Report*, 17 FCC Rcd 12985, 13022 (2002) (*Seventh Competition Report*). This definition was first suggested by a participant at the Commission's CMRS Competition Report Public Forum held in February 2002. *See* Commercial Mobile Radio Services (CMRS) Competition Report Public Forum <http://wireless.fcc.gov/cmrs-crforum.html> for access to participants' presentations and forum transcript. The transcript of the forum can be found at Public Hearing for 7th Annual CMRS Competition Report: Transcript of the Day's Event <http:// wireless.fcc.gov/services/cmrs/presentations/020228.pdf> (Transcript).

[37] *See Eighth Competition Report* at 14837 ¶ 114; *Seventh Competition Report* at 13023.

Department of Commerce's Bureau of Economic Analysis;[38] (4) the definition for "rural" used by RUS for its broadband loan program;[39] (5) the definition for "rural area" used by the Commission in connection with universal service support for schools, libraries, and rural health care providers;[40] (6) the definition of "rural" based on census tracts as outlined by the Economic Research Service of the USDA;[41] (7) the Census Bureau definition of "rural" counties;[42] and (8) any census tract that is not within 10 miles of any incorporated or census-designated place containing more than 2,500 people, and is not within a county or county equivalent that has an overall population density of more than 500 persons per square mile of land. To the extent that commenters believed that none of the eight definitions provided in the *NPRM* are appropriate, the Commission asked commenters to identify specific, quantifiable factors that the Commission should consider when determining whether an area is a "rural area."[43]

10. *Discussion.* We conclude that it is appropriate to establish a baseline definition of "rural area" for purposes of our regulatory policies. Rather than discussing "rural areas" in abstract terms, we believe that a baseline definition will provide clarity in situations where the Commission does not otherwise specifically designate an alternative definition. As noted in the *Rural NPRM*, we believe that some clarification of the term is necessary in order to ensure that our policies are appropriately tailored to promote service to consumers in rural areas and ensure uniform understanding of how our regulatory proposals will be implemented and evaluated. In addition, by adopting a baseline definition of "rural area," we can facilitate the evaluation of our rural-oriented policies. By providing continuity with

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[38] Each EA consists of one or more counties that are "Economic Nodes" and the surrounding counties that are economically related to it. An EA may have more than one economic node. The counties that are economic nodes are metropolitan areas or similar areas that serve as the EA's center(s) of economic activity. As a proxy for urban and rural geographic areas, we looked at counties that make up economic nodes, *i.e.*, nodal counties, versus those counties that do not make up economic nodes, *i.e.*, non-nodal counties. *See Eighth Competition Report* at 14836 ¶ 112; *see also Seventh Competition Report* at 13022.

[39] *See* 7 C.F.R. § 1738.2. A rural area, as characterized in RUS loan programs, is any incorporated or unincorporated place in the United States, its territories and insular possessions (including any area within the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau) that: (1) Has no more than 20,000 inhabitants based on the most recent available population statistics of the Bureau of the Census and (2) Is not located in an area designated as a standard metropolitan statistical area.

[40] *See* 47 C.F.R. § 54.5. As applied to the Universal Service Program, a "rural area" is a nonmetropolitan county or county equivalent, as defined in the Office of Management and Budget's (OMB) Revised Standards for Defining Metropolitan Areas in the 1990s and identifiable from the most recent Metropolitan Statistical Area (MSA) list released by OMB, or any contiguous non-urban Census Tract or Block Numbered Area within an MSA-listed metropolitan county identified in the most recent Goldsmith Modification published by the Office of Rural Health Policy of the U.S. Department of Health and Human Services.

[41] *See* <http://www.ers.usda.gov/briefing/rural/data/desc.htm>. This definition was developed to assist with analyzing U.S. settlement systems. *See* <http://www.ers.usda.gov/briefing/rurality/RuralUrbanCommutingAreas>.

[42] The glossary on the Census website (<http://factfinder.census.gov/servlet/BasicFactsServlet>) defines "rural" as "Territory, population and housing units not classified as urban. 'Rural' classification cuts across other hierarchies and can be in metropolitan or non-metropolitan areas." The definition of "urban" is all populations in "Urbanized Areas," as defined by the Census, and populations of more than 2,500 people outside of urbanized areas.

[43] *Rural NPRM* at 20811 ¶ 12.

respect to the meaning of a "rural area," we can form a basis for comparison of the effects of our "rural area" policies over time.

11. We establish a baseline definition of "rural area" as those counties (or equivalent) with a population density of 100 persons per square mile or less, based upon the most recently available Census data. The Commission first used this definition as a proxy definition in its annual CMRS Competition Report for purposes of analyzing the average number of mobile telephony competitors in rural versus non-rural counties. Our decision to adopt this specific definition over other possible definitions is based on several factors. In order to apply a specific definition to Commission policies, it is important that we not make the definition difficult to administer, or so narrowly tailored to only include what many refer to as the most rural areas. We believe this definition achieves an appropriate balance. As noted in the *Rural NPRM*, definitions based on county boundaries are easy to administer and understand, population data based on county boundaries are widely available to the public,[44] and county boundaries rarely change.[45] Moreover, the total population of the counties that fall within this definition of "rural area" closely tracks the Census Bureau's overall population for non-urban areas; accordingly, although we do not adopt the same definition for "rural area" as the Census Bureau, we believe that we are targeting the same general population. This definition encompasses 2,331 U.S. counties with a total population of approximately 60 million people. These figures, based on the 2000 Census, correspond to approximately 72 percent of all U.S. counties and 21 percent of the total U.S. population.[46] Many commenters support our decision to adopt a definition of a rural area, and several commenters specifically support our decision to adopt a definition based on county boundaries.[47] RCA and Blooston both indicate that for purposes of imposing and administering operational requirements that counties with a population density of 100 persons per square mile or less would be an appropriate definition of a rural area.[48]

12. We recognize, however, that the application of a single, comprehensive definition for "rural area" may not be appropriate for all purposes. Indeed, the Commission stated in the *Rural NPRM* that there may be potential drawbacks of adopting a definition based solely on county boundaries,[49] and a

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[44] For example, this information is available to the public on the Internet. *See*: <http://quickfacts.census.gov/qfd/>; <http://www.census.gov/prod/cen2000/index.html>.

[45] *Rural NPRM*, 18 FCC Rcd at 20811 ¶ 12. The Census Bureau states that, "because states, counties, and statistically equivalent entities are an integral part of many Census Bureau data presentations, they occupy a prominent position in the hierarchy of the basic geographic entities. Therefore, a major responsibility of the Census Bureau is to maintain accurate maps and records of the boundaries and names of these entities, and to identify their populations and other data items correctly." The Census Bureau also notes that, "the boundaries of the primary governmental divisions of the United States, States, counties, and their statistical equivalents, generally are static and change only rarely." *See* "States, Counties, and Statistically Equivalent Entities," <http://www.census.gov/geo/www/GARM/Ch4GARM.pdf>, visited June 14, 2004.

[46] *See* <http://wireless.fcc.gov/resources/ruralarea> (providing a list of counties/county equivalents, including among other things, total population and population density for each area that meets this default definition of a "rural area").

[47] *See* Blooston Reply Comments at 2; CTIA Comments at 4; RCA Comments at 5.

[48] *See* Blooston Reply Comments at 2; RCA Comments at 5.

[49] *Rural NPRM*, 18 FCC Rcd at 20811 ¶ 12.

few commenters similarly expressed concerns that a single definition will not suit all situations.[50] As noted in the *Rural NPRM*, there are several well-established definitions for "rural" utilized by federal agencies, and the Commission itself has employed different proxy definitions of "rural" in various proceedings.[51] We realize that definitions of a "rural area" previously adopted were tailored to specific policies, and that the 100 persons per square mile or less definition may not be a suitable alternative in all cases. We believe, therefore, that applying a comprehensive definition of "rural" to all policies as advocated by Southern LINC is not warranted and may instead have unintended results.[52] Rather than establish the 100 persons per square mile or less designation as a uniform definition to be applied in all cases, we instead believe that it is more appropriate to treat this definition as a presumption that will apply for current or future Commission wireless radio service rules, policies and analyses for which the term "rural area" has not been expressly defined. By doing so, we maintain continuity with respect to existing definitions of "rural" that have been tailored to apply to specific policies, while also providing a practical guideline.

B. Facilitating Access to Spectrum

13. Entities seeking to serve rural areas can be prevented from doing so by lack of access to spectrum that has not yet been made available by the Commission or that is held by others in such areas. We do not believe spectrum is overly congested in rural areas, as demand for spectrum in rural areas will in many cases be less than demand in suburban or urban areas.[53] However, we regularly hear from rural carriers that they are unable to gain access to spectrum in rural markets, notwithstanding their interest and the presence of unused spectrum in the market.[54] We therefore review our policies that affect access to spectrum – including initial licensing determinations, subsequent regulatory oversight of the secondary market, and our re-licensing policies – to ensure that our policies facilitate access to spectrum in rural areas.

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[50] *See* ITA Comments at 5; Itron Comments at 5-6. In its comments, Itron notes anomalies that may arise as a result of adopting a county-based definition for "rural area." Itron states that population in counties may be unevenly distributed, such that a more populated center may nevertheless be classified as part of a rural county. Itron also states that counties are unevenly sized, such that a county on the East coast is generally a smaller geographic area than in the remainder of the country. *See* Itron Comments at 5-6. Itron also indicates that the use of a county-based definition could present implementation problems for utility companies that use Automatic Meter Reading (AMR) devices that operate on unlicensed frequencies. Itron states that AMR systems encompass wide areas that include both rural and urban areas, and that it could lose operating efficiencies if utilities must operate multiple AMR systems to accommodate higher-power unlicensed devices in rural counties and lower-power unlicensed devices in urban counties. *Id.* at 6.

[51] *Rural NPRM*, 18 FCC Rcd at 20809 ¶ 10. For example, the Commission, as noted, uses a specific definition of a rural area in connection with administering universal service support programs for schools, libraries, and rural health care providers. *See* 47 C.F.R. § 54.5.

[52] *See* Southern Linc Reply Comments at 2 – 4.

[53] CTIA Comments at 7 (a shortage of available spectrum has not been shown to be a significant obstacle to the deployment of wireless service to rural areas); Nextel Communications Reply at 2 (no evident access to spectrum problems in rural markets).

[54] *See, e.g.*, Blooston Comments at 9 (does not seem to be an absence of knowledge about what spectrum is unused in rural areas, so much as there is are obstacles to obtaining and using this spectrum).

14. In the following paragraphs, we focus on facilitating opportunities for entities seeking to serve rural areas to acquire spectrum both through initial licensing and through secondary market transactions. We believe that the approach we take in this proceeding will promote service in rural areas, consistent with market-based policies that have encouraged wireless carriers to increase capital spending on equipment and other infrastructure.[55] One of our key objectives is to ensure that carriers that seek to serve rural areas are not prevented from doing so either because they lack of access to adequate spectrum or because those that already have such spectrum lack adequate economic or regulatory incentives to share it. Moreover, we want to do what we can to ensure that spectrum rights flow to those who are willing and able to put the spectrum to use in rural markets. We recognize that this approach is not a panacea. Even where spectrum access is not a barrier to entry, there will be certain rural areas that are very difficult to serve because of high equipment costs, low population density, or other economic factors. Instead of attempting at this time to dramatically manipulate market-based spectrum policies that have yielded tremendous benefits in prices and services for the overwhelming majority of American consumers, we believe the better approach is to gain more experience with secondary markets and to seek additional comment in our *Further Notice* on measures to promote the provision of service in these high-cost and underserved areas by either existing carriers or new entrants.[56]

15. In the sections that follow, we explain how our initial definitions of spectrum licenses, along with our commitment to make substantial amounts of spectrum and licenses available,[57] should facilitate access to spectrum in rural areas. To facilitate such access, we will determine the size of geographic service areas on a service-by-service basis and create opportunities for small service areas as appropriate. In addition, we will continue our commitment to flexible secondary market policies that facilitate post-auction access to spectrum. We also seek comment in our *Further Notice* on additional steps that we might take to promote spectrum access. Our goal is to ensure that the highest valued use of spectrum is not affected significantly by regulatory methodologies that may artificially constrain the choice of the technology used and services provided.

1. Size of Geographic Service Areas

16. *Background.* For many wireless services, the Commission has adopted geographic-area

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[55] *See Eighth Competition Report*, 18 FCC Rcd at 14818-19 ¶ 70 (while noting an apparent decline in wireless industry capital spending between 2002 and 2003, citing one report that, since 1996, capital spending on wireless networks has grown at nearly three times the rate of growth of spending on wireline and a second report that in 2002 such carriers spent more on capital expenditures than in any year with the exception of 2001).

[56] We also note that providing incentives for existing carriers and new entrants to serve areas that they would not otherwise serve (or sooner than they would) is one objective of the Commission's Universal Service Fund proceeding. *See, e.g.,* Federal State Joint Board on Universal Service, CC Docket No. 96-45, *Report and Order*, 12 FCC Rcd 8776, 8880 (1997) (encouraging state commissions to designate service areas that require incumbent local exchange carriers to service areas that they have not traditionally served). In addition, we address competition in rural markets in our annual report on the state of CMRS competition (*see, e.g., Eighth Competition Report*, 18 FCC Rcd at 14834-38 ¶ ¶ 107-121).

[57] *See, e.g.*, Automated Maritime Telecommunications System Spectrum Auction Schedule for September 15, 2004, *Public Notice*, DA 04-1513 (May 26, 2004); Broadband PCS Spectrum Auction Scheduled for January 12, 2005, *Public Notice*, DA 04-1639 (June 18, 2004).

licensing.[58] In contrast to site-based licensing, geographic-area licensing provides licensees with flexibility to respond to demand within a geographic market without the need for additional licensing or authorization by the Commission.[59] When determining the size of geographic service areas, the Commission, after seeking comment, considers a number of factors including the nature of the service or services to be provided and the likely users. The Commission has designated various sizes of geographic service areas in order to encourage participation in spectrum auctions and to facilitate deployment of wireless services.[60]

17. The Act directs the Commission to design competitive bidding systems to promote "economic opportunity and competition and ensuring that new and innovative technologies are readily accessible to the American people by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by minority groups and women."[61] Thus, the determination of geographic area sizes becomes an integral part of a system designed to disseminate licenses for a broad array of uses.

18. In the *Rural NPRM*, the Commission requested comments on the appropriate size of geographic markets in rural areas. The Commission recognized that the initial size of geographic service areas plays an important role in providing the requisite access to spectrum that would stimulate competition and result in greater wireless services in rural areas.[62] The Commission stated that it intends to continue establishing geographic areas on a service-by-service basis, and sought comments on this

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[58] *See, e.g.*, Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, *Report and Order*, 18 FCC Rcd 25162, 25175-77 ¶¶ 35-40 (2003) *reconsideration pending* (*AWS Report and Order*); Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), *Report and Order*, 17 FCC Rcd 1022, 1058-62 ¶¶ 89-96, *reconsideration Memorandum Opinion and Order*, 17 FCC Rcd 11613 (2002) (*Lower 700 MHz Report and Order*).

[59] *See Lower 700 MHz Report and Order*, 17 FCC Rcd at 1058-59 ¶ 89 & n. 256.

[60] The smallest geographic service areas licensed by the Commission are RSAs and Metropolitan Statistical Areas (MSAs), of which there are 734 licenses comprising the U. S. and its territories. MSAs and RSAs are collectively known as "Cellular Market Areas" (CMAs). Spectrum also has been licensed based on Economic Area Groupings (EAGs), which consist of six licensing areas for the entire country. Some terrestrial wireless services, such as narrowband PCS and 1670-1675 MHz, have geographic service areas that have nationwide coverage. Narrowband PCS is also licensed on a regional basis. *See* 47 C.F.R. § 24.102. Other geographic service areas fall along a range of intermediate sizes between RSAs and nationwide service areas, *e.g.*, Major Trading Areas (MTAs), Basic Trading Areas (BTAs), EAs, and Major Economic Areas (MEAs). *See* Summary of Completed Auctions, *available at* <http://wireless.fcc.gov/auctions/summary.html#completed> (denoting geographic service areas for each auction that has been conducted pursuant to 47 U.S.C. § 309(j)). We note that Rand McNally & Company owns the copyright to the MTA and BTA listings. *See* Rand McNally, 1992 Commercial Atlas and Marketing Guide at 36-39 (123d ed. 1992).

[61] 47 U.S.C. § 309(j)(3)(B). The Commission is to prescribe area designations and bandwidth assignments that promote (i) an equitable distribution of licenses and services among geographic areas, (ii) economic opportunity for a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women, and (iii) investment in and rapid development of new technologies and services. *Id.* § 309(j)(4)(C).

[62] *See Rural NPRM*, 18 FCC Rcd at 20833-37 ¶ 63-71 (noting efficiency of spectrum use, competition among providers, and advancing rural wireless services).

approach.[63] The Commission also emphasized the importance of selecting appropriate sized geographic service areas for reducing transaction costs that providers may incur if it becomes necessary to aggregate or disaggregate spectrum, or negotiate in secondary markets, in order to meet spectrum needs.[64]

19. *Discussion.* Based on our experience in past proceedings and the record established in this one, we conclude that maintaining the flexibility to establish geographic areas on a service-by-service basis and promoting the use of a variety of service areas, including small areas such as MSAs/RSAs, are in the public interest. By adopting this framework, we seek to promote service in rural areas, encourage the efficient utilization of spectrum, and to make spectrum and licenses available to a wide array of licensees, including rural providers. Furthermore, we believe that this approach provides flexibility, while providing an opportunity for spectrum to be made available over small areas such as MSAs/RSAs depending on the record and other considerations relevant to the specific spectrum, thereby increasing the likelihood of service to rural markets.

20. Comments in the record support this approach. For instance, some parties commented that the Commission should maintain the flexibility to license on a service-by-service basis to address the particular needs of those services.[65] Comments generally indicated support for the use of various license area sizes to help provide access, including small areas such as MSAs/RSAs[66] and county-sized areas,[67] as well as a mixture of different sizes.[68] T-Mobile comments that the Commission should be careful about providing for smaller geographic market areas.[69] Some comments reflect disagreement with respect to the success of current partitioning and disaggregation rules relative to the deployment of wireless services in rural areas.[70]

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[63] *Id.* at 20836 ¶ 68.

[64] *Id.* at 20833-34 ¶¶ 63-64.

[65] Nextel Partners Reply Comments at 14; *see* AT&T Wireless Reply Comments at 6-7 (commenting that a one-size-fits-all approach undermines ability to ensure efficient spectrum use).

[66] *See* OPASTCO/RTG Comments at 7, OPASTCO/RTG Reply Comments at 8, Blooston Comments at 20, Blooston Reply Comments at 11, and USCC Comments at 4; *see also* RCA Comments at 11 (commenting that all licenses offered in auctions should be MSA/RSA-sized).

[67] Southern LINC Comments at 10; *see* UTStarcom Comments at 11.

[68] Blooston Reply Comments at 10-11, CTIA Comments at 11.

[69] *See* T-Mobile Reply Comments at 5-6 (commenting that service plans consumers want can only be delivered efficiently by carriers with national license footprints).

[70] *Compare* AT&T Wireless Comments at 4-5 (commenting that the ability to partition and disaggregate spectrum has allowed it to conduct transactions with other entities to expedite deployment of service in rural areas) *with* Blooston Comments at 11-12 (commenting that partitioning and disaggregation rules have been largely unsuccessful in assisting rural telephone companies and small businesses to enter the wireless business) *and* OPASTCO/RTG Comments at 10-11 (commenting that due to the small number of licenses that have been partitioned and/or disaggregated, the Commission's reliance on partitioning and disaggregation to stimulate the growth of rural markets is misplaced). "Partitioning" is the assignment of geographic portions of a license along geopolitical or other boundaries. "Disaggregation" is the assignment of discrete portions of "blocks" of spectrum licensed to a geographic licensee or qualifying entity. Disaggregation allows for multiple transmitters in the same

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21. The approach we adopt today will afford us with the flexibility necessary to tailor the size of licensed areas to balance the needs of the different prospective users of the spectrum together with other factors, including the unique characteristics of that spectrum. We believe that this approach will provide incentives for the provision of advanced applications and service offerings in rural areas.

22. *Service-by-Service Determination in Future Proceedings*. Consistent with our tentative finding in the *Rural NPRM*, we intend to continue a service-by-service approach in defining the initial scope of licenses in the future. We find that this approach is the best method to provide carriers adequate access to spectrum, including spectrum in rural areas, and is consistent with the methodologies used in prior proceedings.[71]

23. A service-by-service approach is consistent with our statutory mandate as well.[72] For services subject to auction, the Commission is required to promote various objectives in designing a system of competitive bidding, including the development and rapid deployment of new technologies, products, and services for the benefit of the public, "including those residing in rural areas," and "the efficient and intensive use of spectrum."[73] The flexibility afforded by a service-by-service approach permits us to balance our various obligations. For example, promoting efficient and intensive use of the spectrum may require the use of large spectrum blocks or service areas to achieve economies of scale, which in turn may conflict with promoting opportunities for small businesses and rural service providers that may require smaller spectrum blocks. Moreover, parties within the same geographic areas may have competing interests. In this regard, the flexibility afforded by a service-by-service approach allows the Commission to consider the extent to which multiple licenses and different sizes of geographic areas should be made available to promote competition within the market.[74] This approach also permits the

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geographic area operated by different companies on adjacent frequencies. *See AWS Report and Order*, 18 FCC Rcd at 25193 n. 203.

[71] *See, e.g., AWS Report and Order*, 18 FCC Rcd at 25175-77 ¶¶ 35-40 (licensing bands using a range of geographic licensing areas in order to maintain maximum flexibility); *Lower 700 MHz Report and Order*, 17 FCC Rcd at 1058-62 ¶¶ 89-96 (adopting a combination of large regional areas and small geographic areas based on record).

[72] In addition, a number of commenters indicate a preference for a service-by-service approach. *See* USCC Comments at 2-4 (commenting that approach would balance the competing needs of providers); CTIA Comments at 11 (commenting that design of service areas will vary depending on characteristics of specific block); AT&T Wireless Comments at 9 (commenting that approach is necessary to ensure that the technical and other requirements specific to the various services can be met); Nextel Partners Reply Comments at 14 (agreeing with AT&T Wireless). Comments also suggest that the Commission take affirmative steps to assure that there will be the opportunity for spectrum to be available for service to rural areas. *See* NTCA Comments at 6-8 (asking that presumption be created that spectrum will be licensed according to small geographic areas); OPASTCO/RTG Comments at 7, Reply Comments at 8 and Blooston Comments at 20-22 (commenting that at least one spectrum block in each newly allocated wireless service be reserved for licensing in MSAs/RSAs).

[73] 47 U.S.C. §§ 309(j)(3)(A),(D).

[74] For example, the Commission has assessed the use or uses to which spectrum is likely to be put and determined the geographic scope of licenses that, based on the record in the specific proceeding, would best facilitate rapid deployment of services. *See, e.g.*, Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, WT Docket No. 99-168, *First Report and Order*, 15 FCC Rcd 476, 500 ¶ 57

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Commission to consider the use of large service areas if necessary to provide for quicker build-out of facilities and deployment of new and innovative wireless services. In some instances, the adoption of larger areas may be more effective than the use of smaller areas where spectrum use is to be transitioned to new services. In these circumstances, the availability of licenses based on larger service areas may result in a quicker and more successful transition throughout the nation and thus enable the development and deployment of such new services.

24. Another important element of a service-specific methodology is that it takes into account any technical considerations associated with particular spectrum. For example, questions of whether and when new technologies would use the spectrum, and how much spectrum would be required for any such new technologies, may be considered in determining the appropriate geographic areas for a particular service.[75] In addition, a service-by-service approach would allow the Commission to determine whether propagation characteristics in a particular band would make it more or less conducive to business models that are built on serving customers over a particular size of service area.[76] This approach would help us to promote investment in and the rapid development of new technologies and services.[77]

25. We also find that a service-specific approach allows us to consider the appropriate size of each future service area in the context of geographic partitioning and spectrum disaggregation rules. Geographic partitioning and spectrum disaggregation are available to promote efficient spectrum use and economic opportunity by a wide range of applicants, including rural telephone companies.[78] A service-by-service approach permits the Commission to structure service areas in light of potential costs relating to aggregation, partitioning and disaggregation for the particular spectrum.[79] The Commission can

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(2000). In the *AWS Report and Order*, the Commission observed that including EAs and Regional Economic Area Grouping (REAGs) in the band plan would provide licensees with the ability to form specific service territories, or provide an existing service provider an opportunity to acquire a licensing area in order to supplement existing spectrum holdings. *AWS Report and Order*, 18 FCC Rcd at 25176 ¶ 37. With respect to smaller service areas, the Commission observed that the inclusion of MSAs and RSAs in that licensing scheme would permit rural telephone companies and small service providers that have localized business plans to have various options, including the potential to combine several MSAs/RSAs if necessary. *See id.* at 25176-77 ¶ 39. In the *Lower 700 MHz Report and Order*, the Commission assigned some licenses over MSAs and RSAs, and found that the smaller areas may correspond to the needs of customers of small and rural providers. *Lower 700 MHz Report and Order*, 17 FCC Rcd at 1061-62 ¶ 96. *See also* 47 C.F.R. § 27.6(c) (identifying service areas for the 698-746 MHz band).

[75] *See* 47 U.S.C. § 309(j)(4)(C). The Commission has sought to make spectrum available for a variety of new technologies and providers. *See, e.g.*, Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium, *Policy Statement*, 14 FCC Rcd 19868, 19879-80 ¶ 25 (1999) (*Spectrum Policy Statement*); *Lower 700 MHz Report and Order*, 17 FCC Rcd at 1061-62 ¶ 96; and Modification of Parts 2 and 15 of the Commission's Rules for unlicensed devices and equipment approval, ET Docket No. 03-201, *Report and Order*, FCC 04-165 (rel. July 12, 2004).

[76] *See, e.g., Lower 700 MHz Band Report and Order*, 17 FCC Rcd at 1061 n. 273.

[77] *See* 47 U.S.C. § 309(j)(4)(C).

[78] *See AWS Report and Order*, 18 FCC Rcd at 25193 ¶ 80.

consider whether potentially high transaction costs can be avoided by allowing the initial service areas to be sized in order to meet the needs of the service providers that want to use that spectrum.[80]

26. The continued use of service-specific determinations of appropriate geographic area sizes corresponds with the opportunity for parties to take advantage of our secondary markets leasing rules.[81] Even if the market size or sizes that we adopt in a particular proceeding are not necessarily the optimal size to meet the objectives of all potential users, small carriers are still afforded the opportunity to access appropriately sized market areas through spectrum leasing. In the *Secondary Markets Report and Order*, the Commission stated that facilitating the development of secondary markets enhances and complements several of the Commission's major policy initiatives and public interest objectives, including enabling the development of additional and innovative services in rural areas.[82]

27. AT&T Wireless comments that the establishment of a secondary market in spectrum will "promote the availability of wireless service in rural areas."[83] CTIA states that the operation of the secondary markets rules, together with the ability of parties to partition and disaggregate service areas, will "allow the market to determine the most efficient license size, and permit carriers to react to new technologies and service offerings."[84] We find that the continuing development of the benefits associated with the secondary markets policies and rules complements a service-specific approach to determining the appropriate size or sizes of geographic service areas.

28. We also note that a service-specific approach permits the Wireless Telecommunications Bureau (Bureau) to consider whether any particular auction methodology should be employed in light of the decisions that are made regarding the scope of licenses for that spectrum. For example, certain comments address the potential for use of package bidding.[85] In order to maintain maximum flexibility

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[79] Geographic partitioning and spectrum disaggregation can result in transaction costs. *See* NTCA Comments at 7-8 (commenting that transactional and other costs are associated with partitioning and disaggregation). Transaction costs can include engineering, legal, and management expenses associated with aggregation, disaggregation, or partitioning of spectrum.

[80] With respect to particular spectrum, the Commission has found that the use of a single, large geographic license size could lead to disaggregation and partitioning costs after the auction, whereas the availability of only small geographic licenses at auction could result in aggregation costs either during or after the auction. *AWS Report and Order*, 18 FCC Rcd at 25176 ¶ 36.

[81] *See infra* Section III.B.2..

[82] *See generally Secondary Markets Report and Order,* 18 FCC Rcd at 20607 ¶ 2. The Commission observed that a substantial amount of spectrum is underutilized in rural areas, and stated that "[f]acilitating the ability of rural telephone companies and other entities to gain access to spectrum usage rights so that they can provide new and advanced services to rural consumers should help our efforts to promote the further development and delivery of spectrum-based services to rural communities." *Id.* at 20626 ¶ 45 (footnote omitted).

[83] AT&T Wireless Comments at 2.

[84] CTIA Comments at 11 n. 24.

[85] *See id.* at 11 (balanced approach to determining size of service areas may lead to aggregation of spectrum during auction process through use of package bidding), Southern LINC Comments at 11 (Commission should permit

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with respect to removing barriers to spectrum, however, no particular form of auction design will be endorsed at this time, including the use of package bidding. Rather, consistent with our statutory obligations and with our actions in the past, the Bureau will seek comment on auction-related procedural issues, including auction design, prior to the start of the auctions for the individual spectrum.[86] This will provide an opportunity to weigh the benefits and disadvantages of any particular bidding design prior to the start of the auction, and will permit the auction procedures to be structured, if necessary, to center on matters that may be of particular concern to the likely participants in the auction and to the spectrum use, including the number of licenses to be auctioned, the number of spectrum blocks, and the size of the geographic service areas.

29. A number of commenters support the availability of smaller geographic service areas to help ensure that services are made available in rural areas.[87] One commenter asserts that all licenses should be based on MSAs/RSAs;[88] many others seek a licensing approach that would provide for some MSA/RSA sized units,[89] while others recommend the use of even smaller areas such as those that would be based on counties.[90] T-Mobile urges a cautious approach to setting license size, noting the transaction costs and network integration issue that faced cellular and PCS carriers in attempting to establish national footprints. Its experience suggests that consumers, including those in rural areas, want national service and pricing plans which "can only be delivered efficiently by carriers with national license footprints."[91] Some comments contend that a mixture of service area sizes should be adopted.[92]

30. In conclusion, we decline to adopt any particular size of geographic service area for future licensing at this time. Rather, as we state above, we believe that the existence of such a wide range of comments and views make it all the more appropriate for us to consider issues relating to spectrum access and the scope of licenses for particular spectrum in the context of proceedings to establish rules for the use of that spectrum. We believe that this methodology offers the opportunity for parties that would actually want to be involved with the use of that spectrum to target specific issues

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aggregation of geographic area licenses using package bidding). Package bidding allows bidders to submit all-or-nothing bids on combinations of geographic areas or spectrum blocks in addition to bids on individual licenses or authorizations. *See Rural NPRM*, 18 FCC Rcd at 20837 ¶ 70.

[86] *See, e.g., AWS Report and Order*, 18 FCC Rcd at 25173-74 ¶ 29.

[87] *See* NTCA Comments at 6-8, UTStarcom Comments at 11-13, Blooston Comments at 20-22, Blooston Reply Comments at 10-11, OPASTCO/RTG Comments at 7, OPASTCO/RTG Reply Comments at 7-8, CTIA Comments at 11, RCA Comments at 11.

[88] RCA Comments at 11.

[89] *See* Blooston Comments at 20-22, Blooston Reply Comments at 10-11, OPASTCO/RTG Comments at 7, OPASTCO/RTG Reply Comments at 7-8, CTIA Comments at 11.

[90] *See* Southern LINC comments at 10 (favoring use of county-sized areas), UTStarcom Comments at 11-12 (use geographic areas that are smaller than previously employed, *e.g.*, county-sized).

[91] T-Mobile Reply Comments at 5-6.

[92] CTIA Comments at 11, Blooston Comments at 21, OPASTCO/RTG Reply Comments at 7-8.

relating to adoption of the band plan that will help to remove barriers to entry and increase access to the spectrum.

31. *Multiple Licensing; Opportunities for Providers in Small and Rural Areas.* In our service-by-service evaluations, in certain circumstances we have determined that it is appropriate to license different market sizes. For example, for AWS in the 1.7 GHz and 2.1 GHz bands, the Commission licensed the bands using a range of geographic licensing areas in order to maintain maximum flexibility.[93] That band plan spreads licenses over various blocks of spectrum and uses EAs, REAGs, and a block with 734 licenses based on RSAs/MSAs. The Commission noted the competing needs of parties that sought large and small areas, as well as a combination of large and small geographic licensing areas, and found that there was sufficient spectrum to meet the competing need for both large and small areas.[94] The Commission determined that using a varied selection of areas will foster service to rural areas and promote the policy goal of disseminating licenses among a wide variety of applicants.[95] The Commission stated further that these smaller service areas "provide entry opportunities for smaller carriers, new entrants, and rural telephone companies."[96] Assignment of a variety of licenses will also provide flexibility in service offerings, for example, where the use of MSAs and RSAs in conjunction with other sized license areas may allow licensees to focus on consumers that require localized use without the need for roaming service.[97] Further, some comments on the *Rural NPRM* state that providing a combination of license sizes, together with the availability of secondary markets and partitioning and disaggregation rules, will permit parties to react to new technologies and service offerings.[98] In future proceedings, where we determine the size of service areas on a service-by-service basis, we will consider licensing the spectrum over a range of various sized geographic areas, including smaller service areas such as MSAs/RSAs, where consistent with the record in that proceeding and with other factors that may be relevant to the spectrum.

2. Re-licensing vs. Market-Based Mechanisms

32. *Background.* In an effort to increase access to assigned spectrum, the Commission sought comment on when, and under what circumstances, it should apply re-licensing provisions to prospective spectrum designations.[99] The Commission did not propose to change the licensing provisions for current wireless services, but rather chose to evaluate whether it should use re-licensing as a means to increase access to spectrum, and thus service, especially in rural areas and whether, in the event of such re-licensing, there are particular construction standards, such as "complete forfeiture" or "keep what you

[93] *See AWS Report and Order*, 18 FCC Rcd at 25175-77 ¶¶ 35-39.

[94] *Id.* at 25175 ¶ 35.

[95] *Id.*

[96] *Id.* at 25177 ¶ 39.

[97] *Lower 700 MHz Report and Order*, 17 FCC Rcd at 1061-62 ¶ 96.

[98] *See* CTIA Comments at 11 & n. 24.

[99] *Rural NPRM*, 18 FCC Rcd at 20811-17 ¶¶ 13-30.

use" that are most effective in promoting access and service in rural areas.[100]

33. The Commission explained that one reason it adopted its *Secondary Markets Report and Order* was to enhance economic opportunities and access for the provision of communications services in rural areas.[101] In that proceeding, the Commission took important first steps to facilitate significantly broader access to valuable spectrum resources. These flexible policies extended the Commission's reliance on the marketplace to expand the scope of available wireless services and devices, with the intent of promoting efficient and dynamic use of spectrum resource for the benefit of consumers throughout the country, including those in rural areas. The Commission also sought further comment on various ways in which it could enhance opportunities for spectrum access, efficiency, and innovation by removing unnecessary regulatory barriers and implementing more market-oriented policies that would facilitate moving spectrum to its highest valued uses.[102]

34. Following the policies adopted in the secondary markets proceeding, the Commission sought comment in the *Rural NPRM* on different mechanisms that could potentially be used to reclaim spectrum and increase access by others, including the cellular "keep what you use" approach and the PCS "complete forfeiture" approach. Currently, the process for reclaiming unused licensed spectrum differs across services.[103] Under the cellular "keep what you use" approach, initial licensees must construct facilities five years from license grant and begin providing service within a predefined geographic service area, after which licensees relinquish their spectrum usage rights to all "unserved areas." For the majority of other geographically licensed services, including PCS, licensees are afforded exclusive rights and a renewal expectancy for the entire authorized area once performance requirements are met, regardless of whether service is provided over the entire authorized area. Failure to meet applicable benchmarks results in forfeiture of the entire license, including the rights to operate any facilities already constructed under the authorization.[104]

35. The Commission explained that once spectrum has been reclaimed there are different approaches to re-licensing that spectrum for use by others. Under the cellular "keep what you use"

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[100] *Id.* at 20816-17 ¶¶ 24-26.

[101] *Id.* at 20811-12 ¶ 14.

[102] *Secondary Markets Report and Order*, 18 FCC Rcd at 20687-719 ¶¶ 213-323. *See also*, Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, WT Docket No. 00-230, *Second Report and Order, Order on Reconsideration, and Second Further Notice of Proposed Rulemaking*, FCC 04-167 (rel. Sept. 2, 2004) (*Secondary Markets Second Report and Order*, *Secondary Markets Order on Reconsideration*, and *Secondary Markets Second Further Notice*, respectively).

[103] For instance, site-based private land mobile radio licensees generally are given one year to construct particular sites. A licensee with an unconstructed site after one year loses its authorization to operate at that site, and other parties subsequently may request a license to operate in that unused spectrum. *See Rural NPRM*, 18 FCC Rcd at 20812 ¶ 15.

[104] For example, PCS licensees must meet five- and ten-year benchmarks that mandate coverage of a certain percentage of the population of their licensed areas, or where applicable, make a showing of substantial service. Failure to meet these benchmarks results in automatic cancellation or non-renewal of the entire license. Moreover, for many services, if the licensee loses its authorization for failing to meet the coverage requirements, it is often ineligible to reapply for that authorization. *See id.* at 20812-13 ¶ 16.

approach, the unconstructed portions of a market become available for site-based licensing to other parties via the cellular "unserved area" licensing process. In the alternative, the Commission explained that it could create expanded "overlay" rights to unused spectrum, whereby usage rights are auctioned to new licensees.[105] Comment was also sought on alternative mechanisms such as government defined easements to promote access to spectrum in rural areas.[106]

36. To assess how these potential re-licensing mechanisms would work in the context of the Commission's market-oriented policies based on flexible use of spectrum and substantial service performance requirements, the Commission inquired generally as to what constitutes use of spectrum by a licensee.[107] In this context, it sought comment on whether and how to provide a clear definition of "use" for all parties to support policies for access to "unused" spectrum. If a definition of "use" was to be adopted, the Commission explained that licensees that construct facilities or lease their spectrum must understand how use is construed in terms of construction requirements, re-licensing, and other policies that may affect them so that they will know what rights they will retain in the event they do not use their spectrum.

37. *Discussion*. We decline to adopt specific re-licensing rules for future spectrum allocations at this time. We believe our recently-adopted secondary market-based mechanisms should be afforded a greater opportunity to provide access to spectrum in a more efficient manner. After considering the record established in this proceeding,[108] we agree generally with the majority of commenters who support additional time for the development of secondary market mechanisms to move "unused" spectrum from licensees to other entities who place a higher value on use of the spectrum.[109] Because our secondary markets policies are relatively new and the benefits from their implementation have yet to be fully realized, we decline to adopt re-licensing rules for future spectrum allocations at this time.

38. This approach will allow us to examine alternative approaches while we assess the efficacy of our secondary markets initiatives and underlying policies in rural areas. We believe that the

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[105] To address issues related to the incumbent licensees in these bands, the Commission explained that it could adopt various policies, including mandatory relocation of incumbents to other bands, grandfathering incumbents in the existing band, or providing incentives for band-clearing. It noted that overlays with relocation of incumbents were used in broadband PCS, while grandfathering of incumbents was used in services such as paging and SMR. *Id.* at 20813 ¶ 17.

[106] *Id.* at 20817 ¶ 30.

[107] *Id.* at 20814-16 ¶¶ 19-23.

[108] *See, e.g.*, Nextel Communications Comments at 15, Southern LINC Reply Comments at 12; *see also* AT&T Comments at 8; CTIA Comments at 8; Cingular Comments at 7-8; Dobson Comments at 10, 15; Nextel Communications Reply Comments at 13; Sprint Reply Comments at 25; T-Mobile Reply Comments at 4; Western Wireless Reply Comments at 12.

[109] Despite concerns that leasing may not facilitate access in rural areas, *see* OPASTCO/RTG Reply Comments at 5, our licensing databases indicate that we are beginning to see leasing activity in the secondary market and we believe that secondary market arrangements should be afforded an opportunity to develop before concluding that these policies are insufficient or comparable to the "Commission's failed partitioning and disaggregation rules." *Id.*

flexibility that results from a simplified set of licensing rules gives licensees freedom to determine the choice of technologies and services the market demands and ultimately leads to more efficient spectrum use. Over the last decade, a large percentage of spectrum has been allocated under policies that emphasize flexible use. As in the past, numerous commenters in this proceeding cite the benefits of applying such policies to spectrum allocations where licensing rules rely on market-based mechanisms.[110] These flexible allocation policies underlie our goal of creating an efficient secondary market that can move spectrum to its highest valued end use. Our steps to facilitate spectrum leasing in the secondary market, along with many other measures to encourage more efficient use of spectrum, should facilitate greater access to spectrum by better ensuring that licensees face significant opportunity costs when deciding either to use spectrum for themselves or to lease it to others.

39. In addition, we will continue to examine various alternatives for creating incentives to increase the number and/or level of wireless providers and services in rural areas. In particular, we recognize that, after the initial license term, it may be appropriate in some instances to revert to re-licensing along the lines of some of the proposals received so that another carrier has an opportunity to provide wireless services to such areas. In addition, we are exploring approaches that may be more transparent and better aligned with market-based mechanisms than proposals whose implementation might constrain the flexible use policies underlying our secondary market-based initiatives.[111] We will continue to consider the potential use of re-licensing standards (*e.g.*, "keep what you use") in our *Further Notice*, as well as in the context of future service-specific rulemakings.[112]

40. In the *Rural NPRM*, as part of the Commission's consideration of re-licensing versus market-based mechanisms for increasing licensed access to "exclusive use" spectrum, the Commission also sought comment on whether it should consider at this time a more general application of alternative mechanisms for new licensed services, such as government-defined spectrum easements.[113] Given our

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[110] Nextel Communications Reply at 10 (Commission should trust the markets and not micromanage by mandating "forced access"). Market forces help ensure that licensees use their spectrum efficiently and allocate their financial resources wisely. Several commenters caution that replacing market-based policies with regulatory burdens may subject carriers to performance requirements that are not fiscally sound or economically sustainable. *See* AT&T Comments at 7, CTIA Comments at 6, Cingular Comments at 4, Southern LINC Comments at 9, Nextel Partners Comments at 17-19, Southern LINC Reply at 6-7.

[111] Because the economics of providing service can be significantly different in rural areas as compared to urban areas, our market-based policy acknowledges that market characteristics, especially demographics, will affect the optimal provision of service in rural areas. For example, in the *Rural NPRM*, the Commission stated that it sought to facilitate provision of service in rural areas while also accounting for "market realities." *Rural NPRM*, 18 FCC Rcd at 20807 ¶ 7. It also stated that its "policy to let market forces determine the number of firms operating in a given geographic area, subject to limits on spectrum availability and aggregation . . . allows firms to operate at a competitive and efficient scale of operation." *Id.* at 20807 ¶ 6.

[112] As an alternative to "keep what you use," some commenters support the future use of the PCS "complete forfeiture" model. *See, e.g.*, CTIA Comments at 9, Southern LINC Reply Comments at 12.

[113] *See Rural NPRM*, 18 FCC Rcd at 20817 ¶ 30. As used in the *Spectrum Policy Task Force (SPTF) Report*, and for purposes of this proceeding, the term "easements" refers to government-defined access rights to licensed spectrum that would not require the easement user to obtain the prior consent of the licensee so long as the user complied with the easement conditions, *e.g.*, non-interference with the licensee's use of the spectrum. *Id.* at 20817 n. 67 (citing Spectrum Policy Task Force Report, ET Docket No. 02-135 at 55, 58 (rel. Nov. 2002) (*SPTF Report*).

current efforts to facilitate the development of secondary markets in spectrum usage rights in such spectrum,[114] we believe that we should continue to take steps to facilitate spectrum leasing in secondary markets, and that we should evaluate other access mechanisms in the context of specific service rulemakings. Less than a year has elapsed since our spectrum leasing rules went into effect – a short period of time for an efficient secondary market to develop and for its impact to be seen. As such, any broad evaluation and comparison of secondary markets with the other access mechanisms described in the *Rural NPRM* for new licenses is premature. We note that commenting parties opposed the general imposition of mandatory spectrum easements, many contending that secondary markets have not yet had time to develop.[115] We will, however, continue to evaluate the possible future use of easements in the *Further Notice*.

41. Because we are not adopting any re-licensing policies at this time, we need not define "use" of spectrum.[116] As explained above, we generally believe that by maintaining our flexible, relatively undefined use policy for geographic-area licensees as applicable, we can increase efficient access to and use of spectrum under our secondary markets initiatives that will permit spectrum (and access) to flow to those particular uses that consumers most demand. We note, however, that the definition of "use" will be revisited, should we conclude that re-licensing policies should be adopted as a result of our *Further Notice*.[117] We make clear, however, that spectrum in rural areas that is leased by a licensee, and for which the lessee meets the performance requirements that are applicable to the licensee,

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[114] In its *Secondary Markets Report and Order*, the Commission took various first steps toward facilitating development of secondary markets in spectrum usage rights. *See Secondary Markets Report and Order*, 18 FCC Rcd at 20607-08 ¶¶ 1-3. Recently, the Commission adopted additional reforms to its rules and procedures to facilitate secondary market transactions. *See Secondary Markets Second Report and Order* at ¶¶ 1-115. In addition, we note that the *SPTF Report* recommended that the Commission consider alternative mechanisms, such as government-defined easements, after there has been sufficient time to consider the effectiveness of this approach. *See SPTF Report* at 67.

[115] *See, e.g.*, AT&T Comments at 8, CTIA Comments at 8, Cingular Comments at 7-8, Dobson Comments at 10, 15, Nextel Communications Reply Comments at 13, Sprint Reply Comments at 25, T-Mobile Reply Comments at 4, Western Wireless Reply Comments at 12. At least one commenter, however, noted that permissive easements would be appropriate. *See* Nextel Communications Reply Comments at 5 (stating that a flexible spectrum policy would permit, but not require, licensees to allow operation of unlicensed devices on their networks).

[116] As a result, it follows that we also are not establishing any specific usage baselines for individual services above which licensees must reach in order to minimally comply with our substantial service policies. *See Rural NPRM* at ¶ 22; *see also* Southern LINC Comments at 5, RCA Comments at 6, Blooston Reply Comments at 3. As we explain below, *see infra* Section III.D.1., however, we are amending our rules to permit certain geographic-area licensees to provide substantial service as a means of complying with their existing construction requirements, along with appropriate rural "safe harbors" to increase certainty and alleviate concerns that the substantial service requirement is overly vague. *See also Rural NPRM*, 18 FCC Rcd at 20813-14 ¶ 18 n.58 (retaining "current bench marks for geographic-area licensees but . . . [adding] a substantial service option to provide such licensees with greater flexibility in meeting their construction requirements"). Accordingly, we disagree with commenters supporting strict reporting guidelines and will continue to rely on current rules that in many cases permit licensees to determine the showings necessary to report their construction. *See e.g.*, OPASTCO/RTG Comments at 6. To the extent that our rules defining protected service areas vary by service, *see Rural NPRM*, 18 FCC Rcd at 20815-16 ¶ 23, we intend to consider harmonizing these regulations across services in a future rulemaking.

[117] *See infra* Section IV.C.2.

will be construed as "used" for the purposes of performance criteria and construction requirements.[118] Further, as we note in our discussion regarding infrastructure sharing arrangements, to the extent that licensees are sharing spectrum usage rights with third parties under spectrum leasing arrangements, such arrangements will be subject to the policies, rules, and procedures set forth in the *Secondary Markets* proceeding.[119] Thus, to the extent that parties enter into spectrum leasing arrangements pursuant to the *Secondary Markets Report and Order*, the applicable policies, rules, and procedures relating to performance, build-out, and discontinuance of service will apply.[120] Finally, consistent with the majority of comments,[121] we also find it premature to establish a data base of available "white space" in rural areas or increase the use of spectrum "audits."[122]

C. Facilitating Access to Capital

42. In order to construct facilities and provide Americans living or traveling in rural areas with important, innovative and advanced services – including such services as broadband, E911, and medical telemetry – wireless licensees must have adequate access to capital resources. We recognize that capital formation issues may be particularly relevant for would-be rural service providers, who may have fewer consumers among whom to spread the costs of providing service. Although we have existing measures to provide funding for deployment in rural areas, such as the Universal Service Fund, we

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[118] This is consistent with the Commission's decision in its secondary markets proceeding. *See Secondary Markets Report and Order*, 18 FCC Rcd at 20655, ¶¶ 114-115. We note that merely leasing spectrum, where the lessee does not fully meet the licensee's performance requirements, would not be considered "use" under this decision. *See, e.g.*, RCA Comments at 6. We find the record to be insufficient to declare a policy of regulatory flexibility for system construction extension requests arising from the failure of an unrelated lessee to live up to its contractual obligation. *See* Blooston Reply Comments at 4.

[119] *See infra* Section III.D.3.

[120] *See Secondary Markets Report and Order*, 18 FCC Rcd at 20655 ¶¶ 114-5. RCA and NTCH request that the Commission treat spectrum that is involved in infrastructure sharing arrangements as "in use" for purposes of performance requirements and not subject such spectrum to forfeiture or re-licensing. *See* RCA Comments at 14, NTCH Comments at 5-7. NTCH's proposal contemplates situations including the pooling of frequencies for multiple users to use a large spectrum block, citing Amendment of Parts 1, 21, 73 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and other Advanced Services in the 2150-2162 MHz Bands ITFS/MDS proceeding, Docket No. 03-66. *See* NTCH Comments at 6. As we state above, licensees and third parties may rely on the policies, rules, and procedures in the *Secondary Markets* proceeding to the extent that licensees are sharing spectrum usage rights with third parties under spectrum leasing arrangements. We further note that other procedures may be available to licensees and other parties that enter into arrangements that directly include the use of licensed spectrum, including the filing of applications pursuant to Section 310(d) seeking full or partial assignments of licenses. *See infra* Section III.D.3.

[121] *See* Blooston Comments at 8-9, CTIA Comments at 7-9 (claiming that the Commission's limited audit resources would be better utilized finding available spectrum in congested areas, rather than in rural areas where spectrum is generally available), Cingular Comments at 5 n.15, Dobson Comments at 14, 17, Nextel Communications Reply Comments at 9, 10 n. 18 (asserting that audits coupled with a take-back program, if appropriate anywhere, would appear to be better suited for use in non-rural markets), Western Wireless Reply Comments at 12. In contrast, ITA supports additional construction and operational status audits, and the development of a "white space" database. *See* ITA Reply Comments at 7-8.

[122] *See supra* note 116 (noting our intent to harmonize regulations across services in a future rulemaking).

recognize that there are additional steps that we can take to facilitate access to capital. In the following sections, we discuss funding resources available through RUS and outline the ways in which we are working together with RUS to promote rural deployment. We also examine and modify our policies governing security interests in FCC licenses. As discussed below, we believe that relaxing our policies to permit licensees to grant RUS a security interest in FCC licenses, conditioned upon the prior approval of any assignment or transfer of control of the license, will permit licensees to take full advantage of the collateral value of their spectrum rights and reduce the risks of lending. We also examine our cellular cross-interest rule and transition to case-by-case review of cellular cross-interests in RSAs. We believe that these actions will facilitate investment and financing opportunities for licensees seeking to provide service in rural areas.

1. Rural Utilities Service (RUS) Loan Programs

43. RUS, through its Telecommunications Program, assists the private sector in developing, planning, and financing the construction of telecommunications infrastructure in rural America. Programs administered by RUS include: (1) infrastructure loans; (2) broadband loans and grants;[123] (3) distance learning and telemedicine loans and grants; (4) weather radio grants; (5) local TV loan guarantees; and (6) digital translator grants. For fiscal year 2004, no less than $2.211 billion in loans is available for the Rural Broadband Access Loan and Loan Guarantee Program, with $2.051 billion for direct cost-of-money loans, $80 million for direct 4 percent loans, and $80 million for loan guarantees.[124]

44. In order to encourage greater access and deployment of wireless services throughout rural America, the Commission's WTB has partnered with RUS to sponsor the "Federal Rural Wireless Outreach Initiative" (FCC/RUS Outreach Partnership).[125] The FCC/RUS Outreach Partnership was announced on July 2, 2003.[126] The four key goals of the FCC/RUS Outreach Partnership are to: (1) exchange information about products and services each agency offers to promote the expansion of wireless telecommunications services in rural America; (2) harmonize rules, regulations and processes whenever possible to maximize the benefits for rural America; (3) educate partners and other agencies about Commission, WTB and USDA/RUS offerings; and (4) expand the FCC/WTB and USDA/RUS partnership, to the extent that it is mutually beneficial, to other agencies and partners.[127]

45. The *Rural NPRM* sought comment on what, if any, further regulatory or policy changes should be made to complement RUS's Telecommunications Program, and any other method of securing

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[123] RUS implemented the Rural Broadband Access Loan and Loan Guarantee Program in fiscal year 2003. The broadband loan program provides loans and loan guarantees for the construction, improvement and acquisition of facilities and equipment for broadband service in eligible rural communities. 7 C.F.R. § 1738.10(a).

[124] *See* Rural Broadband Access Loans and Loan Guarantees Program, *Notice of Funds Availability*, 69 Fed. Reg. 16231 (Mar. 29, 2004). The funding levels for the 4 percent direct loans and the loan guarantees is derived from the budget authority carried over from prior years' mandatory funding.

[125] *See* "FCC and USDA Hold Kick-Off Meeting of the "Federal Rural Wireless Outreach Initiative," *News Release*, 2003 WL 21511807 (rel. July 2, 2003) (*Federal Rural Wireless Outreach Initiative News Release*).

[126] For an overview of the FCC/RUS Outreach Partnership Kick-Off Event, *see* <http://wireless.fcc.gov/outreach/ruralinitiative/event20030702.html>.

[127] *See Federal Rural Wireless Outreach Initiative News Release.*

financing for rural build out and operations.[128] The Commission requested comment on methods to help facilitate access to capital in rural areas in order to increase the ability of wireless telecommunications providers to offer service in rural areas.[129] The Commission noted that an important part of accomplishing this goal is through the promotion of federal government financing programs. The *Rural NPRM* requested comment on how the Commission can assist in making the RUS loan programs more effective.[130] The Commission sought comment on whether there are any Commission regulations or policies that should be reexamined or modified to facilitate participation in the RUS programs by wireless licensees and service providers.[131]

46. *Discussion.* We believe that the FCC/RUS Outreach Partnership continues to be a useful means of encouraging greater access and deployment of wireless services throughout rural America. Indeed, commenters indicated general support for the FCC/RUS Outreach Partnership as well as the expansion of the initiative to other federal agencies as well as non-governmental entities. While there was support for our rural wireless initiative in general, however, certain commenters expressed concern over RUS loan program rules and policies that they argue are overly burdensome.[132] Commenters request the Commission's assistance in making RUS loan programs more effective, and urged the Commission to adopt policies that will help facilitate access to capital in order to spur rural deployment. For example, Nextel Partners suggested that the Commission as well as other agencies develop a range of grant and loan programs to assist carriers in the provision of mobile wireless services to rural areas.[133] With respect to RUS loan program rules, we note that certain RUS policies are statutorily mandated. To the extent that we can adopt rules or policies that will facilitate the use of RUS loan programs, however, we will do so. For example, as we set out below, we are modifying our policy with respect to the grant of security interests in FCC licenses, which we believe will enable more prospective borrowers to qualify for RUS loans. We will continue to work with RUS and other federal agencies to research and identify rural community wireless telecommunications needs and strive to create program efficiencies that might assist with exploring options to meet those needs. Further, we will continue to work with RUS to develop rural outreach programs, materials and workshops, which provide technical and economic information on telecommunication technologies and funding options. We are pleased to note that commenters have expressed interest in taking part in the FCC/RUS Outreach Partnership.[134] We look

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[128] *Rural NPRM*, 18 FCC Rcd at 20839 ¶ 77.

[129] *Id.*

[130] *Id.*

[131] *Id.*

[132] *See, e.g.*, CTIA Comments at 14-15 (RUS application rules and practices are unnecessarily bureaucratic and, in some cases, clearly favor incumbent rural wireline providers at the expense of new wireless entrants), Nextel Partners Comments at 9-10 (there is a focus on wireline rather than wireless issues, legislative changes should be implemented to allow for a range of grants and loans to wireless carriers for the provision of a wide array of narrowband as well as broadband mobile wireless services), OPASTCO/RTG Comments at 12, Western Wireless Reply Comments at 6 (incumbency protections in the RUS program should be eliminated).

[133] Nextel Partners Comments at 10.

[134] For example, NRTC indicated interest in assisting the Commission and RUS through the FCC/RUS Outreach Partnership, and ITA offered to facilitate information sharing among the private land mobile community from the

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forward to future opportunities to work with these parties as part of the FCC/RUS Outreach Partnership and encourage other entities to participate in our ongoing efforts to promote rural wireless deployment.

2. Conditional Security Interests to RUS

47. *Background.* As we noted in the *Rural NPRM*, the Commission's policies with respect to commercial transactions involving FCC licenses have evolved over time.[135] As the Commission has gained experience in regulating wireless licensees and as the wireless marketplace has developed, the Commission's policies with respect to control and capital formation issues have matured. Particularly in the last decade, the Commission has modified its policies to address evolving licensee and consumer needs, while concurrently taking appropriate measures to safeguard its regulatory authority vis-à-vis private licensees and to ensure compliance with its statutory responsibilities. Central to the evolution of these market-oriented policies is the Commission's understanding that, in order for wireless licensees to construct facilities and deploy innovative services to all Americans, wireless licensees must have sufficient access to capital.

48. Although the Commission has increasingly embraced market-based transactions, recognizing the marketplace enables licensees to put spectrum to its highest and best uses, this has not always been the case. As a historical matter, the Commission initially was restrictive in its policies towards market-oriented transactions. For example, the Commission prohibited the sale of bare licenses, basing its position on its interpretation of Sections 301 and 304 of the Communications Act.[136] The Commission stated that "Section 301 and 304 provide, *inter alia*, that licenses issued by the Commission convey no property interest," and that "[t]o allow a permit to be transferred in a situation in which the station seller obtains a profit, prior to the time that programs tests have commenced, would appear to violate this prohibition."[137] The Commission subsequently changed its interpretation of these statutory provisions, however, and has approved the for-profit sale of unbuilt licenses and construction permits for terrestrial wireless, broadcasting and satellite services. In the context of the sale of an authorization of an unbuilt cellular telephone facility, the Commission held that "the plain language of Sections 301 and 304 of the Act does not address the sale of authorizations for stations, whether built or unbuilt, for-profit or not for-profit," but "[r]ather . . . congressional concerns that the Federal Government retain ultimate control over radio frequencies, as against any rights, especially property rights, that might be asserted by licensees who are permitted to use the frequencies."[138] The Commission went on to conclude that the

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RUS program or from the FCC/RUS Outreach Partnership. *See* ITA Reply Comments at 10; NRTC Comments at 7.

[135] *Rural NPRM*, 18 FCC Rcd at 20840 ¶ 79.

[136] *See* Revision and Update of Part 22 of the Public Mobile Services Rules, 95 FCC 2d 769, 800-01 n. 31 (1983), on reconsideration, 101 FCC 2d 799 (1985), on further reconsideration, 2 FCC Rcd 1798 (1987); Amendment of Section 73.3597 of the Commission's Rules, *Report and Order*, 52 Rad. Reg. 2d (P&F) 1081, 1089 (1982), on reconsideration, 9 FCC 2d 971(1985).

[137] Amendment of Section 73.3597 of the Commission's Rules, *Notice of Proposed Rule Making*, 47 Fed. Reg. 985, 987 (1982).

[138] Application of Bill Welch, *Memorandum Opinion and Order*, 3 FCC Rcd 6502, 6503 ¶ 10 (1988) (*Bill Welch*). See also 1998 Biennial Regulatory Review - Streamlining of Mass Media Applications, Rules, and Processes,

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for-profit sale of "whatever rights a permittee has in its license" to a private party, subject to prior Commission approval, would be permissible under these statutory provisions.[139] In 1991, the Commission received a Petition for Declaratory Ruling regarding the grant of security interests in the broadcasting context,[140] and in 1992, the Commission initiated a proceeding in the broadcast context, seeking comment on whether we could improve access to capital by allowing licensees to grant security interests to creditors.[141] In 1994, the Commission found that a "security interest in the proceeds of the sale of a license does not violate Commission policy."[142]

49. Over time, the Commission's policies for all spectrum-based services have evolved to expressly permit licensees to grant security interests in the stock of the licensee, in the physical assets used in connection with its licensed spectrum, and in the proceeds from operations associated with the licensed spectrum.[143] Notably, the Commission itself has taken an exclusive security interest in licenses subject to the auction installment payment program and a senior security interest in the proceeds of a sale of an auctioned license. In such circumstances, and subject to the requirements and protections of the security agreements that bind the participants in the installment payment program, the Commission has allowed licensees to provide their lenders a subordinated security interest in the proceeds of a license sale.[144] Furthermore, the Commission continues to develop and evaluate its policies regarding security interests and control of spectrum, in order to ensure that these policies afford licensees sufficient flexibility consistent with the Communications Act to develop and deploy innovative technology and keep pace with ever-changing consumer needs. In its *Secondary Markets Policy Statement*, the Commission considered ways in which licensees may be able to maximize their efficient use of spectrum

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Report and Order, MM Docket No. 98-43, 13 FCC Rcd 23056, 23070 ¶ 30 (1998) ("We affirm the holding in Bill Welch that there is no per se statutory proscription against the for-profit sales of unbuilt stations."); Amendment of the Commission's Space Station Licensing Rules and Policies, *First Report and Order*, IB Docket No. 02-34, 18 FCC Rcd 10760, 10842-43 ¶¶ 217-19 (2003).

[139] *Bill Welch*, 3 FCC Rcd at 6503 ¶ 11.

[140] *See* Petition for Declaratory Ruling filed by Hogan & Hartson (Feb. 21, 1991), available at <http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1035940001> and <http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1035940002> (Hogan & Hartson Petition).

[141] Review of the Commission's Regulations and Policies Affecting Investment in the Broadcast Industry, *Notice of Proposed Rule Making and Notice of Inquiry*, 7 FCC Rcd 2654 ¶¶ 18-23 (1992) (*Broadcast Capital Formation Notice*).

[142] Application of Walter O Cheskey, Trustee-in-Bankruptcy for N.C.P.T. Cellular, Inc. (Assignor) and Triad Cellular L.P. (Assignee), *Memorandum Opinion and Order*, 9 FCC Rcd 986 (Mobile Serv. Div., Comm. Car. Bur. 1994), application for review denied, 13 FCC Rcd 10656, 10660 (1998), application for review denied, *Amarillo CellTelCo v. FCC*, 1998 WL 796204 (D.C. Cir. 1998) (*Cheskey*).

[143] *See* Commission Policy Regarding the Advancement of Minority Ownership in Broadcasting, 99 FCC 2d 1249, 1254 (1985).

[144] *See* 47 C.F.R. § 1.2110(g)(3) (requiring execution of promissory note and security agreement as a condition of participation in the installment payment program).

by leveraging "the value of their retained spectrum usage rights to increase access to capital," and indicated its intent to examine Commission policies prohibiting security and reversionary interests in licenses.[145] The Commission noted that it had not yet taken a position on whether its policy towards prohibiting a licensee to give a security interest in the license itself "is statutorily mandated or solely dictated by regulatory policy."[146] In the *Secondary Markets Report and Order*, the Commission found that licensees could enter into certain types of leasing transactions that are not deemed transfers of *de facto* control under Section 310(d) of the Act without prior Commission approval, provided licensees continued to exercise effective working control over the spectrum they lease. The Commission indicated that it was updating its policy for interpreting *de facto* control in the context of spectrum leasing, in order "to reflect more recent evolutionary developments in the Commission's spectrum policies, technological advances, and marketplace trends."[147]

50. In the *Rural NPRM*, the Commission continued its examination of its security interest policies as a means of facilitating access to capital, consistent with its authority under the Communications Act. Specifically, the Commission sought comment on whether permitting licensees to grant security interests in their licenses to RUS would result in lower costs of and greater access to capital. The Commission noted that it would review and require prior Commission approval of an assignment to RUS, in accordance with the Commission's transfer and assignment policies, *before* RUS could assume control of a license. The Commission also sought comment on whether modifying our policy to permit RUS to take a security interest in FCC licenses is a natural outgrowth of Commission and judicial developments, which recognize the value and ability of a lender obtaining a security interest in the licensee's stock, proceeds and other assets without infringing upon the Commission's statutory obligations. The Commission asked whether a licensee could grant RUS a security interest in an FCC license without compromising the Commission's obligation to maintain control of spectrum in the public interest and completely fulfill its applicable mandates under the Communications Act of 1934, as amended.[148] The Commission sought comment on what the consequences of such a policy shift might be, including what, if any, difference from the perspective of RUS, a third-party lender, or the licensee, there would be on a relaxation of the current security interest policies in the circumstances described above. Finally, the Commission sought comment on a concern that had been raised in the broadcasting context, regarding the independence of broadcast stations and about the ability of creditors to have substantial influence over a borrower station.[149] The Commission asked whether such dangers exist in the connection with RUS's attainment of security interests in non-broadcasting wireless licenses, especially as it relates to preserving and protecting facilities-based competition and innovation by and among wireless service providers.

51. *Discussion.* After careful review of the record, as well as the judicial and regulatory

[145] Principles for Promoting the Efficient Use of Spectrum by Encouraging the Development of Secondary Markets, *Policy Statement*, 14 FCC Rcd 24178, 24187-88 (2000) (*Secondary Markets Policy Statement*).

[146] *Id.* at ¶ 23 n. 35.

[147] *Secondary Markets Report and Order*, 18 FCC Rcd at 20610 ¶ 10.

[148] *See* 47 U.S.C. §§ 301, 304. Section 301 of the Act provides that the government can authorize the use but not the ownership of the spectrum ("channels of radio transmission"). Section 304 requires that any license applicant waive any claim to the use of the spectrum as against the regulatory power of the United States.

[149] *See Broadcast Capital Formation Notice*, 7 FCC Rcd at 2658-59 ¶ 23 (1992).

developments of the past decade, we believe that it is appropriate to adjust our policy with respect to the grant of security interests in FCC licenses. Of the comments we received regarding this issue, all but one was in favor of allowing RUS to take a security interest in FCC licenses.[150] As RUS states, "[a]llowing RUS to obtain a security interest in an FCC license will greatly improve loan security and will facilitate the agency's roles in fulfilling the President's goal for the universal deployment of broadband service . . . ."[151] We agree. We therefore modify our policy and permit commercial and private wireless, terrestrial-based licensees to grant security interests in their FCC licenses to RUS, conditioned upon the Commission's prior approval of any assignment or transfer of *de jure* or *de facto* control. A licensee therefore may grant RUS a security interest in its FCC license, provided that the Commission approves the transaction, pursuant to its authority under Section 310(d) of the Communications Act, *before* the secured party can exercise its right to foreclose on the license. We limit this policy change to wireless, terrestrial-based licensees that are within the scope of this proceeding.[152] Further, any security interest granted to RUS must be expressly conditioned, in writing as part of all applicable financing documents, on the Commission's prior approval of any assignment of the license or any transfer of *de jure* or *de facto* control of the license to the secured party or other person or entity. We also note that, in the case of a licensee operating under the installment payment program, the Commission will retain its exclusive, senior secured position with respect to the license. The Commission also will retain its senior secured position with respect to the proceeds of the sale of such license. Accordingly, we clarify that RUS may not obtain a security interest in an FCC license in instances where the FCC itself is a secured creditor, but may obtain a subordinated interest in the proceeds subject to the requirements of the licensee's installment payment obligations (*e.g.*, those set forth in the security agreement between the licensee and the FCC).

52. We believe that relaxing our security interest policy to permit licensees to grant RUS a conditional security interest in their FCC licenses will greatly enhance the value of a licensee's available collateral by facilitating RUS's ability (as a secured party) to keep the licensees' assets together as a package. As RUS points out, "an operation is much more valuable if there is the ability to sell the operation as a whole instead of liquidating the individual assets in the event of default."[153] Similarly, Blooston notes that "[a]dding the license to the collateral pie will likely reduce the risks of lending, as RUS would be able to keep all of the required elements of a wireless project together as a package."[154] We agree with these assessments and are unpersuaded by RCA's implication that a licensee can maximize the value of its collateral without the license.[155] While we acknowledge that it may be possible

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[150] RCA filed comments opposing this proposal. *See* RCA Comments at 12-13.

[151] RUS *Ex Parte* at 1 (*ex parte* filing received May 5, 2004).

[152] *See supra* note 3.

[153] RUS *Ex Parte* at 1. RUS also observes that by keeping the spectrum together with the assets, service to the public may remain uninterrupted during any foreclosure or bankruptcy proceedings, as well as during any restructuring arrangements. *Id.* at 2.

[154] Blooston Comments at 23.

[155] *See, e.g.*, RCA Comments at 13 (contending that "[t]here is no inherent value in the bare license, only in the proceeds of a license sale and lenders already hold the tools necessary to protect their interests and obtain those proceeds"). We also perceive little merit in RCA's argument that "RUS should have no interest in the license *per se* or in becoming the licensee." *Id.* This argument misses the point: the goal of relaxing the security interest

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for a licensee – primarily through careful corporate structuring – to cobble together a set of interests that it can offer to a lender as security that approximates a security package containing the license, we believe that rural licensees will be much better served if they can approach RUS for financing without having to incur the potentially substantial transactional and other administrative costs that might be necessary to create such a package.

53. The record supports our conclusion that a relaxation of our security interest policy with respect to RUS may measurably increase the financing opportunities of licensees serving the rural population of the United States. As RUS indicates, the possibility of obtaining a security interest in a license may enable RUS to approve some loans that might otherwise be rejected because the applicant cannot produce sufficient collateral.[156] RUS states that "[i]n order to reasonably secure [a] lien, RUS would need either a lien on the licenses or some other asset," and that "[i]n many cases, the loan process is complicated and delayed because of the need to negotiate some other form of collateral when the borrower cannot pledge the licenses as security."[157] RUS states that "without the right to secure an interest in the license granted by the FCC, RUS may have to reject applications for financial assistance that were on the cusp, given that the going-concern value of the borrower's company would have to be lowered in its financial analysis."[158] Blooston also notes that "[h]aving the option to pledge a security interest would lower transactions costs between the lender and borrower, as the borrower will garner greater access to capital, and the RUS could possibly have greater access to secondary loan markets."[159] We disagree with RCA's contention that permitting RUS to obtain a security interest in an FCC license would not enhance RUS financing opportunities while making the RUS lending process more onerous. Based on the record, including the comments of RUS, we believe that relaxing our security interest policy will do the opposite: by permitting RUS to take a conditional security interest in FCC licenses, we can help make the RUS loan process less burdensome and enhance RUS loan opportunities.

54. Our decision to relax the current restrictions on security interests reflects the Commission's increased reliance on market-oriented policies to facilitate and encourage competition. At the same time, limiting this initiative to RUS, as was proposed in the *Rural NPRM*, avoids any suggestion that the Commission's recognition of a third party property interest in an FCC license itself conveys any type of ownership interest prohibited by the Communications Act. Although this relaxation of our security interest policy marks the first time that the Commission has recognized such an interest, the third party involved (RUS) is a federal governmental agency. Thus, we do not believe that anyone – licensees, their lenders, or the courts – would mistakenly construe our action as a retreat from the principle of the Communications Act that the spectrum itself is a public resource and cannot be "owned" or deemed private property. This principle is stated most explicitly in Sections 301 and 304 of the Act. Section 301 provides for the control of the United States over "all the channels of radio transmission" and for "the

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policy in the manner described herein is not to encourage RUS to become a licensee, but to facilitate RUS's ability to lend a sufficient amount of funds to rural licensees, in order to better serve the rural population of our country.

[156] RUS *Ex Parte* at 1; *see also* RUS *Ex Parte* Appendix at 2.

[157] RUS *Ex Parte* at 1.

[158] RUS *Ex Parte* Appendix at 2.

[159] Blooston Comments at 23.

use of such channels, but not the ownership thereof, by persons for limited periods of time, under licenses granted by Federal authority."[160] Section 301 also states that "no such license shall be construed to create any right, beyond the terms, conditions, and periods of the license."[161] Section 304 provides that the Commission cannot grant any station license until "the applicant thereof shall have waived any claim to the use of . . . the electromagnetic spectrum as against the regulatory power of the United States."[162] Furthermore, pursuant to Section 310(d), the Commission must review and approve license assignments and transfers of control, assess and confirm the basic qualifications of assignees and transferees, and, more generally, determine whether the transaction in question will serve the public interest, convenience and necessity.[163]

55. In view of the limitations of such provisions as Sections 301, 304 and 310(d), it is clear that the Communications Act prohibits a licensee from "owning" the spectrum it uses, and that the Commission cannot grant, with a license, any such ownership interests. At the same time, however, we recognize that a licensee holds certain "spectrum usage rights," as defined within the terms, conditions, and period of the FCC license at the time of issuance.[164] The Commission has used the security interest prohibition as one bright line to mark off the point at which a licensee's spectrum usage rights end and the government's control of spectrum begins. By permitting RUS – but only RUS – to take a conditional security interest in an FCC license, we maintain the heart of this bright line: *i.e.*, a prohibition on anyone other than the federal government holding a property interest in something as closely associated with spectrum as an FCC license. RUS (like the FCC) is an agency of the United States with a particular mandate from Congress. We believe that permitting it to obtain a security interest in an FCC license will further its mandate and is fully consistent with the view of spectrum as a public resource. Moreover, by conditioning any assignment or transfer of *de facto* or *de jure* control of the license on prior Commission approval pursuant to Section 310(d), we ensure that the Commission retains ultimate control over the spectrum. Thus, the FCC's approval must be obtained before RUS can foreclose on a security interest it may hold in an FCC license or before RUS or any other entity may otherwise obtain control of the license or licensee. As Blooston notes, this prior approval will "satisf[y] [our] Congressional mandate, while at the same time encouraging capital formation in rural areas."[165]

56. We recognize that one could argue that a grant of a security interest in an FCC license does not convey any ownership of spectrum, but rather ownership of the licensee's private spectrum usage rights associated with the FCC license.[166] However, after carefully considering whether this argument would support extending the relaxation of our security interest policy to non-United States

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[160] 47 U.S.C. § 301.

[161] *Id.*

[162] 47 U.S.C. § 304.

[163] *See* 47 U.S.C. § 310(d).

[164] *See Secondary Markets Policy Statement,* 14 FCC Rcd at 24187 ¶ 22.

[165] Blooston Comments at 23.

[166] *Cf. Bill Welch,* 3 FCC Rcd at 6503 ¶ 11 (finding that Sections 301 and 304 of the Act "do not bar the for-profit sale to a private party, subject to prior Commission approval, of whatever private rights a permittee has in its license").

lenders, we have decided to limit our action to RUS, as stated in the *Rural NPRM*. Thus, we will maintain a bright line prohibition against private (non-government) lenders taking a security interest in an FCC license.

57. As an additional matter, we believe that relaxing our policy to permit the grant of conditional security interests in FCC licenses to RUS is unlikely to result in RUS exercising inappropriate influence over the licensee. We are in agreement with Blooston, which notes that "it is very unlikely that RUS would have an inappropriate influence over the licensee."[167] As noted earlier, licensees may grant security interests in the proceeds of the sale of their licenses, as well as in their assets and stock. We have received no evidence, and we have no reason to suspect, that RUS has used any of these types of transactions, already permitted under our rules and policies, to exercise inappropriate influence over any FCC licensee. In light of these circumstances, we do not believe that permitting a licensee to grant RUS a conditional security interest in the license itself will increase the likelihood of such inappropriate influence.

58. We note that some commenters express concern that modifying our policy to permit RUS to obtain a security interest could impede its ability to obtain financing from other lenders. For example, RCA claims that this policy shift "could inadvertently cause private loans to become so completely subordinated to RUS loans that private capital resources are diminished as a result."[168] Although Nextel supports security interests generally, Nextel states that "RUS should not require such a security interest as a minimum threshold requirement to its loan programs, but only as one of several alternative options to secure the loan obligation."[169] Nextel notes that "[t]his would allow the carrier flexibility in structuring its financing without deterring other, private lenders whose perceived ability to secure their loans might be adversely affected by RUS's priority as a creditor in the license itself."[170] As Blooston states, however, "[p]roviding licensees with the ability to offer their license as collateral would create an opportunity, not a requirement," and "the wireless provider, as in all loan decisions, will initially determine whether the business risks outweigh the benefits of using its license for collateral."[171] Licensees have the option of obtaining financing through RUS; in the event they find RUS's terms unsuitable, they may elect to work with private lenders. Licensees are not required to provide RUS with a conditional security interest, although this modification of our policy permits them to do so, at their option.

3. Cellular Cross-Interest Rule

59. *Background.* To facilitate additional access to capital by cellular carriers in rural areas, the Commission sought comment regarding whether the prohibition against cellular cross-interests in all RSAs remains in the public interest. As set forth in Section 22.942 of the Commission's rules, the prohibition substantially limits the ability of parties to have interests in cellular carriers on different

[167] *See id.* at 24.

[168] RCA Comments at 13.

[169] Nextel Partners Comments at 11-12.

[170] *Id.*

[171] Blooston Comments at 24.

channel blocks in the same rural geographic area.[172] To the extent licensees on different channel blocks have any degree of overlap between their respective cellular geographic service areas (CGSAs) in an RSA,[173] Section 22.942 prohibits any entity from having a direct or indirect ownership interest of more than five percent in one such licensee when it has an attributable interest in the other licensee.[174] An attributable interest is defined generally to include an ownership interest of 20 percent or more or any controlling interest.[175] An entity may have a non-controlling and otherwise non-attributable direct or indirect ownership interest of less than 20 percent in licensees for different channel blocks in overlapping CGSAs within an RSA.[176]

60. The Commission consolidated into the instant proceeding two petitions that seek reconsideration of the decision in the December 2001 *Spectrum Cap Sunset Order*,[177] which, on the basis of the state of competition in CMRS markets, sunset the CMRS spectrum cap rule in all markets[178] and eliminated the cellular cross-interest rule in MSAs because cellular carriers in urban areas no longer enjoyed first-mover, competitive advantages.[179] In March 2002,[180] the Commission sought comment on petitions filed by Dobson Communications Corporation, Western Wireless Corporation, and Rural Cellular Corporation (Dobson/Western/RCC) and Cingular Wireless LLC (Cingular) seeking reconsideration of the portion of the *Spectrum Cap Sunset Order* that retained the cellular cross-interest rule in RSAs.[181] While the Commission left the cross-interest rule in place in RSAs, it indicated in the

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[172] 47 C.F.R. § 22.942. The original cellular cross-interest rule was adopted in 1991. *See* Amendment of Part 22 of the Commission's Rules to Provide for Filing and Processing of Applications for Unserved Areas in the Cellular Service and to Modify Other Cellular Rules, CC Docket No. 90-6, *First Report and Order and Memorandum Opinion and Order on Reconsideration,* 6 FCC Rcd 6185, 6228-29 ¶¶ 103-06 (1991) (*Cellular First Report and Order*).

[173] Application of the cellular cross-interest rule requires comparison of the CGSAs of cellular licensees operating on A Block frequencies in an RSA with those of cellular licensees operating on B Block frequencies in the same RSA. Because cellular licensees are authorized on frequencies in either one or the other of these channel blocks, any geographic area within an RSA will fall within the CGSAs of no more than two cellular licensees (one on each channel block).

[174] 47 C.F.R. § 22.942(a).

[175] *Id.* § 22.942(d)(1), (2). Other rules for determining attributable interests are set forth elsewhere in Section 22.942(d). *See id.* §§ 22.942(d)(3)-(9).

[176] *Id.* § 22.942(b).

[177] *See* 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services, WT Docket No. 01-14, *Report and Order*, 16 FCC Rcd 22668 (2001) (*Spectrum Cap Sunset Order*).

[178] *Id.* at 22669 ¶ 1.

[179] *Id.* at 22707 ¶ 84.

[180] *See* Petitions for Reconsideration of Action in Rulemaking Proceeding, *Public Notice*, Report No. 2540 (Mar. 15, 2002).

[181] Cingular Petition for Reconsideration, WT Docket No. 01-14 (Feb. 13, 2002) (Cingular Petition); Dobson/Western/RCC Petition for Reconsideration, WT Docket No. 01-14 (Feb. 13, 2002) (Dobson/Western/RCC Petition). In addition to incorporating submissions from these parties into the instant proceeding, pursuant to the

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Spectrum Cap Sunset Order that it would consider waiver requests and reassess the need for the rule at a future date.[182]

61. In the *Rural NPRM*, the Commission made clear that it sought to balance its efforts to remove unnecessary regulatory barriers to financing and investment of cellular service in rural areas with the need to safeguard competition in RSAs. As an initial matter, it sought comment on a tentative conclusion to retain the current cellular cross-interest rule in RSAs with three or fewer CMRS competitors.[183] Assuming the Commission were to decide to retain a number-based rule, the *NPRM* also sought comment on how to define a "competitor" under such a proposal, whether a "competitor" might be any CMRS provider with significant geographic overlap with the cellular licensee,[184] and whether a transition period was necessary to sunset the rule for those RSAs with four or more competitors.[185]

62. In the alternative, the Commission sought comment on a range of other options for modifying or eliminating the current rule in a way that promotes investment in rural areas while retaining adequate competitive safeguards. For example, the Commission sought comment on whether to eliminate the prohibition for all RSAs where the ownership interest being obtained is not a controlling interest (*i.e.*, where the interest is a non-controlling interest and where the transaction otherwise would not require prior FCC approval).[186] It sought comment on the extent to which the waiver option has deterred or prevented acquisition of capital in rural markets.[187] Although a specific waiver process has existed to address this barrier to investment in rural areas,[188] the Commission noted that the transactions costs and regulatory uncertainty surrounding any waiver procedure may deter some beneficial investment in these areas.[189] Finally, the Commission sought comment on the option of extending case-by-case

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recommendation of staff, *see* Federal Communications Commission 2002 Biennial Regulatory Review, WT Docket No. 02-310, GC Docket No. 02-390, *Staff Report of the Wireless Telecommunications Bureau*, 18 FCC Rcd 4243 app. IV at 4316 (2003), the Commission incorporated the comments of parties seeking elimination of the cellular cross-interest rule in the context of its 2002 biennial regulatory review. *See generally* 2002 Biennial Regulatory Review, *Report*, 18 FCC Rcd 4726 (2003).

[182] *Spectrum Cap Sunset Order*, 16 FCC Rcd at 22708-09 ¶¶ 88, 90.

[183] *See Rural NPRM*, 18 FCC Rcd at 20847 ¶ 95.

[184] We used "significant overlap" in the context of applying the CMRS spectrum cap rule and asked whether a similar concept could be used in the context of the cellular cross-interest rule. *See* 47 C.F.R. § 20.6(c); *Rural NPRM*, 18 FCC Rcd 20848 ¶ 97.

[185] *Rural NPRM*, 18 FCC Rcd at 20848 ¶ 97.

[186] In this context, it observed that cellular licensees in MSAs are free to procure financing that involves ownership interests that fall below the threshold that triggers Commission review, while cellular licensees in all RSAs are not so permitted. *Id.* at ¶ 98.

[187] *Id.* at 20848-49 ¶ 98.

[188] *See Spectrum Cap Sunset Order*, 16 FCC Rcd at 22709 ¶ 90.

[189] The Bureau did grant a request for waiver of the cellular cross-interest rule to allow CenturyTel Wireless to acquire a 14 percent non-controlling limited partnership interest in Lafayette MSA LP. *See* CenturyTel Wireless,

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review, as established in the *Spectrum Cap Sunset Order*, to promote investment and reduce the possibility of impeding transactions that are actually in the public interest.[190] The Commission recognized the important role that the cellular cross-interest rule has provided in the past against the possibility of significant additional consolidation of cellular providers in rural areas, but it inquired whether the public interest may be better served by the benefits of pure case-by-case review.[191]

63. *Discussion.* Based on our review of certain arguments raised on reconsideration and in the comments regarding the advantages of case-by-case review, as well as developments since the release of the *Spectrum Cap Sunset Order* in 2001, we find that reliance on a uniform case-by-case review process for aggregations of spectrum and cellular cross interests in RSAs is currently the better approach as compared to prophylactic limits. We believe that continued application of the cellular cross-interest rule in RSAs may impede market forces that could drive financing and development of new services in rural and underserved areas. Accordingly, we find that it is in public interest to apply a more flexible approach in reviewing cellular competition in rural areas and, as a result, we will extend our Section 310(d) case-by-case review to all cellular markets.

64. We therefore eliminate the cellular cross-interest rule in RSAs and will utilize our case-by-case approach to review transactions where a level of cellular cross interests arises to a substantial transfer or assignment under Section 310(d) of the Act.[192] In addition, if a party with a controlling or otherwise attributable interest in one cellular licensee[193] within an RSA obtains a non-controlling interest of more than 10 percent in the other cellular licensee in an overlapping CGSA, we will require the licensee to notify the Commission within 30 days of the date of consummation of the transaction by filing updated ownership information (using an FCC Form 602) reflecting the specific level of investment. This notification requirement will sunset at the earlier of: (1) five years after the release of this item, or (2) at the cellular licensee's specific renewal deadline.[194] By employing this approach to maintain scrutiny over those cross interests that pose a particular risk to competition in the near term, we conclude that we have struck the proper balance between promoting investment and protecting consumers against potential competitive harms in rural areas.

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Inc. and Century Tel, Inc., *Memorandum Opinion and Order*, 18 FCC Rcd 1260 (WTB 2003). The WTB found that the cellular cross-interests in the RSA overlap area did not involve a substantial likelihood of significant competitive harm because the local market was generally competitive with six providers offering service at similar prices. *Id.* at 1266 ¶ 19.

[190] *See Rural NPRM*, 18 FCC Rcd at 20849 ¶ 99.

[191] *Id.*

[192] 47 U.S.C. § 310(d).

[193] An attributable interest will be defined generally to include an ownership interest of 20 percent or more or any controlling interest.

[194] Although Dobson and other commenters state that a transition period before using pure case-by-case review is unnecessary, *see* Dobson Comments at 12-13, *see also* RCA Comments at 14 (indicating that a sunset period is unnecessary), we adopt a sunset period for the notification requirement, in order to provide an additional period of time for competition to develop.

65. Although the Commission last determined that the level of CMRS economic competition was not meaningful enough to warrant complete elimination of the cellular cross-interest rule pursuant to Section 11 of the Act,[195] it did not fully consider in its *Spectrum Cap Sunset Order* whether a move to case-by-case review for cross interests in RSAs would be in the public interest under the broader scope of its 2000 biennial review of spectrum aggregations limits.[196] To perform meaningful and timely review of spectrum aggregation transactions without the CMRS spectrum cap rule, the Commission explained that it needed time to develop effective guidelines for this process, as well as to ensure that sufficient resources were devoted to the task.[197] In contrast, because the concerns underlying the original purpose of the cross-interest rule had been achieved in MSAs, the Commission was able to immediately eliminate the rule in that context without having to consider to any great extent the rule's necessity as compared to other, less burdensome tools.[198] When the Commission subsequently determined that market conditions in rural areas had not changed sufficiently such that it should eliminate the cellular cross-interest rule in RSAs pursuant to Section 11 of the Act, it concluded its reexamination of the rule and did not evaluate whether it would nevertheless be in the public interest to extend the advantages of flexible case-by-case review to aggregation and cross interests of cellular spectrum in rural areas.[199]

66. Notwithstanding Section 11 of the Communications Act and the Commission's past findings regarding the level of economic competition in rural markets,[200] we decide on reconsideration of our *Spectrum Cap Sunset Order* and based on the comments filed in response to the *Rural NPRM* that it is in the public interest to eliminate the cellular cross-interest rule. Instead, parties will be permitted to file under our case-by-case review process for substantial cross interests in all cellular spectrum and report to the Commission a certain level of cellular cross interests in rural areas that do not arise to an assignment or transfer of control. Such a change in approach, supported by adequate resources and procedures and facilitated by collection of sufficient industry information along with appropriate enforcement mechanisms, is currently the better approach for evaluating whether proposed cross interests reflect opportunities for increased financing and new services or indicate potential risks of anticompetitive market conditions. The Commission indicated that its 2000 biennial review would consider whether other factors beyond the impact of competition made the cross interest rule appropriate

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[195] *See Spectrum Cap Sunset Order*, 16 FCC Rcd at 22708-09 ¶¶ 88-89.

[196] *See id.*

[197] *See id.* at 22696-97 ¶ 57.

[198] *See id.* at 22680-81 ¶ 29.

[199] Because the Commission had not had an opportunity to develop effective procedures or ensure that sufficient resources were available, it did not extend its review beyond Section 11 of the Act to consider whether other factors beyond the impact of competition had made it appropriate to repeal the cellular cross-interest rule in RSAs. *See id.* at 22708 ¶ 88. We disagree with Cingular's claim that applying the cellular cross-interest rule in RSAs is not "'well tailored to the harm that it seeks to prevent.'" Cingular Reply to Opposition to Petition for Reconsideration, WT Docket 01-14, at 7 (Apr. 18, 2002) (quoting *Spectrum Cap Sunset Order*, 16 FCC Rcd at 22709 ¶ 90). Without resources, procedures, industry information collection, and appropriate enforcement mechanisms, applying the cross-interest rule (with provisions for waiver) in RSAs was the least restrictive and most efficient means at that time to regulate cellular competition in rural areas.

[200] *See supra* note 1. Although economic conditions seem to be changing, we need not make any determinations here. *See infra* ¶ 72.

for modification,[201] and in this context,[202] we find they do.[203]

67. Although we recognize the safeguard that the cellular cross-interest rule has provided against the possibility of significant additional consolidation of control over cellular spectrum in rural areas and the attendant serious anticompetitive effects,[204] we find that the public interest is better served by the benefits of case-by-case review with its greater degree of flexibility to reach the appropriate decision in each case, reduced likelihood of prohibiting beneficial transactions or levels of investment both in urban and rural areas, and ability to account for the particular attributes of a transaction or market. The greater regulatory flexibility offered by this change in tools for review outweighs any "guarantees" to the competitive nature of cellular competition in rural areas ensured by the current cross-interest rule,[205] as that rule may inadvertently discourage transactions and cross interests that could be found to be in the public interest.

68. We believe that no cross interest or transaction should be presumptively prohibited in RSAs and that we should consider such proposals under an approach that is consistent with the same case-by-case analysis that is employed in all other CMRS contexts.[206] The majority of commenters to the

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[201] *See Spectrum Cap Sunset Order*, 16 FCC Rcd at 22708-09 ¶ 88-90.

[202] We also note the broad context of the Commission's inquiry in the *Rural NPRM* that purposely went beyond Section 11 of the Act to consider such factors.

[203] Sprint PCS argues the decision to retain the cellular cross-interest rule in RSAs was justified because it was shown that rural areas are in fact different urban markets. *See* Sprint PCS Opposition to Petition for Reconsideration, WT Docket No. 01-14 (Apr. 5, 2002) (Sprint PCS Opposition). If the Commission was limited to awaiting the development of meaningful economic competition under Section 11 of the Act before it could consider whether other tools for review are more appropriate, it may result that application of the cellular cross-interest rule in RSAs could be justified indefinitely. The Commission acknowledged in the *Spectrum Cap Sunset Order* that the underlying economics appear to make it unlikely that competition in RSAs will evolve in the near term to rival that in MSAs. *Spectrum Cap Sunset Order*, 16 FCC Rcd at 22691 ¶ 43; *see also id.* at 22680 ¶ 28 ("In rural markets . . . demographic and geographic conditions generally appear to render additional large-scale entry economically difficult to support.").

[204] Although economic theory dictates that there is not a static threshold by which a reduction in competitors results in anticompetitive harm, a consolidation in a local cellular market from duopoly to monopoly status provides consumers with less choice and potentially less benefits from competition. The likelihood of the Commission approving a cellular consolidation between two providers in such conditions remains small. The concerns over rural roaming services that Sprint PCS presents simply presuppose that the Commission would affirmatively grant the merger of two cellular carriers and permit a monopoly of cellular roaming services in rural areas. *See* Sprint PCS Opposition at 7-8. Moreover, the Commission indicated in the *Spectrum Cap Sunset Order* that it disagrees with commenters who believe that prophylactic rules should be retained to further opportunities for roaming arrangements. *Spectrum Cap Sunset Order*, 16 FCC Rcd at 22694 ¶ 51 (explaining that case-by-case review allows the flexibility to consider any such concerns raised with respect to specific applications).

[205] *See Spectrum Cap Sunset Order*, 16 FCC Rcd at 22679 ¶ 26. ("In adopting the cellular cross-interest rule, the Commission acted '[i]n order to *guarantee* the competitive nature of the cellular industry and to foster the development of competing systems.'") (emphasis added) (quoting *Cellular First Report and Order*, 6 FCC Rcd at 6628 ¶ 104.).

[206] *See, e.g.*, Cingular Petition at 5-6, CTIA Comments at 2, Verizon Wireless Reply Comments at 2.

Rural NPRM supported elimination of the cellular cross-interest rule,[207] either in its entirety or in RSAs with more than three competitors.[208] We agree with Dobson and other commenters that indicated that removal of the cellular cross-interest rule would promote efficient spectrum transactions, and would allow the market to function properly.[209]

69. In the *Spectrum Cap Sunset Order*, the Commission gave much consideration to the availability of less burdensome case-by-case review before it decided that the CMRS spectrum cap rule was no longer necessary in the public interest.[210] Given the level of competitive market forces and the benefits of flexible case-by-case review, it determined that it had the means to sunset the CMRS spectrum cap rule in all markets, RSAs as well as MSAs. The Commission decided to retain the cellular cross-interest rule in RSAs based on reasoning that the likelihood of approving a cellular consolidation between two providers in a given market was small and that it would be more efficient and less costly for the Commission to maintain a prophylactic rule and to entertain waiver requests for the small subset of transactions in RSAs where competition was more robust.[211] In review, given advancements in our case-by-case processing procedures and resources since December 2001, we believe that we can repeal the rule to better encourage transactions and levels of financing that are in the public interest while maintaining much of the protection afforded by the cellular cross-interest rule. We agree with commenters that the current waiver approach may interfere with investment in rural areas by discouraging certain financing in the RSA portions of a regional market but not in the MSA portions.[212] Our approach in essence relaxes the permitted threshold to 49.9 percent, consistent in part with the position of U.S. Cellular Corp. (USCC).[213] However, for the reasons explained here, we disagree with USCC's argument that there is no conceivable situation where the public interest could be served by considering such transactions in RSAs.[214] Our decision here is to change tools for review to a more

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[207] *See* AT&T Wireless Comments at 10, CTIA comments at 12-13, Cingular Comments at 5-6, Dobson Comments at 10-12, OPASTCO/RTG Comments at 14, Arctic Slope Reply Comments at 1-2, AT&T Wireless Reply Comments at 10, Western Wireless Reply Comments at 7, OPASTCO/RTG Reply Comments at 9.

[208] *See, e.g.*, Dobson Comments at 12. After further consideration, we believe that a number-based rule defined by notions of "competitor" would be too imprecise and inflexible in a dynamic marketplace where, *e.g.*, spectrum can be leased and infrastructure can be shared.

[209] *See* AT&T Wireless Comments at 10, CTIA Comments at 12-13, Cingular Comments at 5-6, Dobson Comments at 10-12, OPASTCO/RTG Comments at 14, Arctic Slope Reply Comments at 1-2, AT&T Wireless Reply Comments at 10, Western Wireless Reply Comments at 7, OPASTCO/RTG Reply Comments at 9.

[210] *See, e.g., Spectrum Cap Sunset Order*, 16 FCC Rcd at 22695-96 ¶ 54 ("Although we decide today that the spectrum cap rule is no longer necessary in the public interest, we must still achieve the objectives that the spectrum cap was intended to promote. We believe that these objectives can now be better achieved in the context of secondary market transactions through case-by-case review, properly performed.").

[211] *Cf. id.* at 22696 ¶ 56.

[212] *See, e.g.*, CTIA Comments at 13, Arctic Slope Reply Comments at 2, OPASTCO/RTG Comments at 14. One commenter stated that the Commission should waive application of the cross-interest rule for entities owned and controlled by Alaska Native Corporations or Indian tribes. *See* Council Tree Comments at 3, 7-10.

[213] USCC Comments at 4.

[214] *Id.* at 5.

precise standard, and we make no determination that such proposed transactions are any more likely to be found to be in the public interest.

70. Case-specific review, along with information resources and enforcement mechanisms,[215] is a more targeted process to examine the actual competitive positions involved in a particular transaction or level of cross interests and ensure that acquisitions of and cross interests in spectrum do not have anticompetitive effects that render them contrary to the public interest.[216] As the Commission indicated in the *Spectrum Cap Sunset Order* in the context of the CMRS spectrum cap rule, we can rely on case-by-case review of CMRS spectrum aggregation (including cross interests of cellular spectrum in rural areas) to fulfill our statutory mandates to promote competition, ensure diversity of license holdings, and manage the spectrum resource in the public interest.[217] We have been increasing the resources available to review spectrum aggregation transactions and developing internal procedures for review of concentration of CMRS spectrum in general, and cross interests of cellular spectrum in rural areas in particular. While it at first places greater resource demands on parties and the Commission, over time, these actions will provide parties, including small businesses, with legal precedent and a reasonable degree of certainty and transparency regarding cross interests of cellular spectrum in rural areas and should minimize the administrative costs of case-by-case review for all applicants and licensees, as well as Commission staff. In addition, we believe there may be an inequity that distorts the market in any area in which more than just the two cellular licensees hold spectrum and find that the better approach to safeguarding competition is to take account of the particular circumstances of each market through case-specific review.[218]

71. To review aggregations or cross interests of cellular spectrum in rural areas, we eliminate Section 22.942 of the Commission's rules such that applicants and parties will only be required to obtain prior Commission approval for transactions subject to Section 310(d) of the Act. Although we are imposing a reporting requirement to collect ownership information on certain levels of interests that do not trigger Section 310(d) review, we have adopted reporting thresholds that reflect a comparatively higher 10 percent level of permitted cross interest by a party with a controlling interest in a given cellular licensee. Under Section 22.942, a party with a controlling interest in one of the cellular licensees may only have a 5 percent direct or indirect ownership interest in the other licensee in that CGSA.[219] Under the new reporting standard, we will allow a party with a controlling or otherwise attributable interest in one of the cellular licensees to have a non-controlling or otherwise non-attributable direct or indirect

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[215] During our case-by-case review of any cellular consolidation that occurs within rural areas, we will collect information as necessary to exercise our authority to not only grant or deny applications and/or modify instruments of authorization, but to enforce sanctions in cases of misconduct where we find evidence of collusion or other anticompetitive practices.

[216] 47 U.S.C. § 310(d). Specifically, Section 310(d) of the Communications Act requires us not to approve any "transfer, assignment, or disposal of [a] permit or license, [or attendant rights]" unless we find that "the public interest, convenience, and necessity might be served" thereby. *Id.*

[217] *See Spectrum Cap Sunset Order*, 16 FCC Rcd at 22696 ¶ 55 (citing 47 U.S.C. §§ 301, 303, 309(j), 310(d)).

[218] In the RSA markets that have been covered by the cellular cross-interest rule, for example, the rule prohibits the two cellular licensees from merging without filing a waiver, but does not prevent one cellular licensee from merging with a PCS licensee.

[219] 47 C.F.R. § 22.942.

ownership of up to and including 10 percent in the other cellular licensee in overlapping CGSAs without notification.[220] We have not been able to determine conclusively that such cross interests pose a significant threat to competition, and this new 10 percent threshold will afford petitioners and commenters some relief from restrictions on financing in the RSA portions of a regional market.[221] Moreover, it harmonizes the reporting threshold with our FCC Form 602 ownership reporting requirements imposed currently on all licensees.

72. We do not make any determination here on the extent to which cellular carriers may continue to hold a dominant market share in rural areas or whether a consolidation of cellular licenses in RSAs would likely result in a significant reduction in competition.[222] We note, however, that a concentration of interests between the two cellular licensees in rural areas would more likely result in a significant reduction in competition than an aggregation of additional CMRS spectrum by such licensees. In addition, we note that different risks to competition are present depending on whether a proposed cross interest would be held by a telecommunications carrier or by a third-party bank or other source of financing. By reviewing substantial aggregations of cellular cross-interests on a case-by-case basis, as discussed above, we retain the flexibility to evaluate individual transactions on their own merits and account for these different factors in determining whether approval of the transaction will serve the public interest under section 310(d).

D. Increasing Licensee Flexibility

1. Performance Requirements

73. *Background.* Over the past decade, the Commission has shifted away from site-based licensing for wireless licensees and has adopted more flexible, geographic-area based allocations that provide licensees with greater freedom to provide different types of services. In making this shift, the Commission also has adopted performance benchmarks that increase licensees' flexibility to offer a variety of services, including service that may not require ubiquitous geographic coverage. As a general

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[220] We will require a party with a controlling interest in one cellular licensee in a CGSA to apply for prior Commission approval of a controlling interest, no matter how small, in the other licensee in that market. A party that has non-controlling or otherwise non-attributable direct or indirect ownership interest of up to 20 percent in both licensees in the same CGSA will not be required to report ownership information to the Commission.

[221] We agree with Dobson/Western/RCC that investment in rural areas should not be presumptively prohibited by unnecessarily restricting financing in the RSA portions of a regional market and that these benefits outweigh the costs. *See* Dobson/Western/RCC Petition at 7-10.

[222] *See Spectrum Cap Sunset Order*, 16 FCC Rcd at 22708-09 ¶ 89. The Commission determined that, based on the information available, the only markets with meaningful economic competition under Section 11 of the Act were those in MSAs where cellular carriers no longer possess market power. Because the objectives of the cross-interest rule had been achieved in MSAs, the Commission repealed the cellular cross-interest rule in that context. Without a more comprehensive showing that competition in rural areas was meaningful, however, the Commission was unable to conclude that repeal of the cellular cross-interest rule in RSAs was appropriate, because the cellular providers in those areas seemed to continue to enjoy first-mover advantages and to dominate the marketplace. In the *Spectrum Cap Sunset Order*, the Commission described fewer choices in terms of providers, pricing plans, and service offerings that consumers in the majority of RSAs have over consumers in MSAs. Based on the record in that proceeding, the Commission found that rural markets have significantly less competition than urban markets due to population density and economics. *See id.* at 22684-85 ¶ 34.

matter, geographic-area licensees are not required to construct their entire geographic area in order to retain their authorizations. Instead, depending upon the specific service, the Commission's rules may require coverage of a certain percentage of the licensed area's population or a certain percentage of the licensed area's geographic area. For many, but not all services,[223] the Commission has adopted a flexible "substantial service" construction standard that allows licensees that are providing a beneficial use of the spectrum to retain their authorizations without satisfying a prescribed population- or geographic-based construction requirement.[224] The substantial service standard was intended to provide flexibility for services with a variety of uses for the spectrum (*i.e.*, fixed or mobile, voice or data) or with a high level of incumbency that would prevent a new geographic-based licensee from meeting the coverage requirements. While the definition of "substantial service" is generally consistent among wireless services,[225] the factors that the Commission will consider when determining if a licensee has met the standard vary among services.[226] Once a licensee satisfies its construction requirement during its initial license term, the Commission's rules currently do not require that the licensee satisfy additional construction requirements during subsequent renewal terms other than the standards necessary to achieve a renewal expectancy.[227]

74. In the *Rural NPRM*, the Commission proposed modifications to our construction requirements to promote licensee flexibility and the build-out of rural areas. First, the Commission proposed to adopt a "substantial service" construction benchmark for all wireless geographic area licensees that are subject to build-out requirements but that did not have the option of meeting those requirements by providing substantial service.[228] Specifically, the Commission proposed to amend its

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[223] At present, the following geographic area licensees are subject to construction requirements and do not have a substantial service construction option: 30 MHz broadband PCS licensees, 800 MHz SMR (blocks A, B, and C only), 220 MHz licensees providing services other than fixed services and who do not have at least one incumbent licensee in their markets, LMS licensees, and MDS/ITFS licensees.

[224] For some services, such as LMDS and 39 GHz, the Commission has adopted only a "substantial service" construction requirement. *See* 47 C.F.R. §§ 101.1011(a) (LMDS), 101.17(a) (39 GHz).

[225] Substantial service generally has been defined as service that is sound, favorable, and substantially above a level of mediocre service that would barely warrant renewal. *See, e.g.*, 47 C.F.R. §§ 22.503(k)(3), 27.14, 90.685(b), 95.831, 101.527(a), 101.1011(a).

[226] For example, in some wireless services, the Commission indicated that licensees providing niche, specialized, or technologically sophisticated services may be considered to be providing "substantial service." *See, e.g.*, Amendment to Parts 2 and 90 of the Commission's Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 MHz and the 935-940 MHz Bands Allotted to the Specialized Mobile Radio Pool, PR Docket No. 89-553, *Second Report and Order*, 10 FCC Rcd 6884, 6898-99 ¶ 41 (1995). In other services, the Commission has indicated that licensees providing an offering that does not cover large geographic areas or population (*e.g.*, point-to-point fixed service), but nonetheless provides a benefit to consumers, also may meet the standard. *See, e.g.*, Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service, PR Docket No. 89-522, *Third Report and Order* and *Fifth Notice of Proposed Rulemaking*, 12 FCC Rcd 10943, 11017-18 ¶ 158 (1998).

[227] As the Commission noted in the *Rural NPRM*, licensees must file applications for renewal of their authorizations and must comply with any applicable renewal requirements. *See Rural NPRM*, 18 FCC Rcd at 20825 ¶ 43 n. 93. See also 47 C.F.R. § 1.949.

[228] *Id.* at 20820-23 ¶¶ 35-39.

regulations to extend the substantial service construction benchmark to the following licensees: 30 MHz broadband PCS licensees; 800 MHz SMR licensees (blocks A, B, and C); certain 220 MHz licensees;[229] LMS licensees; Multipoint Distribution Service and Instructional Television Fixed Service (MDS/ITFS) licensees; and 700 MHz public safety licensees.[230] The Commission observed that construction benchmarks that mandated population- or geographic-specific coverage might hinder licensees from serving niche or less populated areas, and might unintentionally discourage construction in rural areas.[231] Second, the Commission asked whether we should adopt geographic-based construction requirements for private and commercial terrestrial wireless services that are licensed on a geographic area basis and that do not have a geographic-based requirement.[232] The Commission noted that a geographic benchmark would provide licensees who did not intend to focus construction efforts on population centers with an alternative.[233] Third, the Commission asked whether we should adopt substantial service "safe harbors" that are tailored to providing coverage in rural areas, and proposed safe harbors for mobile as well as fixed services.[234] Finally, the Commission also asked whether requiring compliance with additional construction requirements in license terms following initial renewal of the license might be likely to increase build-out in rural areas.[235]

75. *Discussion.* In large part, we adopt the proposal, as set forth in the *Rural NPRM*, to extend the substantial service construction benchmark to all wireless services that are licensed on a geographic area basis. Specifically, we amend our regulations to provide a substantial service construction benchmark for the following licensees: 30 MHz broadband PCS licensees; 800 MHz SMR licensees (blocks A, B, and C); certain 220 MHz licensees;[236] LMS licensees; and 700 MHz public safety licensees. These licensees now have the option of satisfying their construction requirements by providing substantial service or by complying with other service-specific construction benchmarks

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[229] We do not include EA and regional 220 MHz licensees offering fixed services or who have at least one incumbent, co-channel Phase I licensee in their markets. These licensees already may satisfy their construction requirement through the provision of substantial service. *See* 47 C.F.R. § 90.767(b). Similarly, Phase II nationwide 220 MHz licensees offering fixed services already have a substantial service option. *See* 47 C.F.R. § 90.769(b).

[230] In the *Rural NPRM*, the Commission noted that current construction requirements require 700 MHz public safety licensees to provide "substantial service," but that this requirement is premised upon the provision of substantial service to a certain percentage of their licensed population at five and 10 years. *See Rural NPRM*, 18 FCC Rcd at 20820-21 ¶ 35 n. 79 (citing 47 C.F.R. § 90.529(b).). Because this "substantial service" requirement is not a flexible benchmark, the Commission included 700 MHz public safety spectrum within the scope of this proceeding. *See id.*

[231] *Rural NPRM*, 18 FCC Rcd at 20821 ¶ 36.

[232] *Id.* at 20823-24 ¶ 40.

[233] *Id.*

[234] *Id.* at 20824-25 ¶¶ 41-42.

[235] *Id.* at 20825-26 ¶¶ 44-46.

[236] We exclude EA and regional 220 MHz licensees offering fixed services or who have at least one incumbent, co-channel Phase I licensee in their markets. We also exclude Phase II nationwide 220 MHz licensees offering fixed services. *See infra* n.230.

already available to them under the Commission's rules. We decline to take any action with respect to the MDS/ITFS and the 71-76 GHz, 81-86 GHz and 92-95 GHz (70/80/90 GHz) bands, because construction rules for these bands recently have been or will be addressed in service-specific proceedings.[237]

76. Based on the record before us, we believe that modifying our rules to permit these additional licensees to satisfy their construction requirements by providing substantial service will increase their flexibility to develop rural-focused business plans and deploy spectrum-based services in more sparsely populated areas without being bound to concrete population or geographic coverage requirements.[238] As the Commission noted in the *Rural NPRM*, particularly in cases where a licensee has a population-based construction requirement, licensees have both an economic and practical incentive to

[237] Although the Commission sought comment regarding adopting a substantial service benchmark for MDS/ITFS licensees in the *Rural NPRM*, we have released a service-specific *Further Notice of Proposed Rule Making* seeking to develop more of a record on this issue. We will make a determination with respect to MDS/ITFS in that proceeding. *See* Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150 - 2162 and 2500 - 2690 MHz Bands; Part 1 of the Commission's Rules - Further Competitive Bidding Procedures; Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service Amendment of Parts 21 and 74 to Engage in Fixed Two-Way Transmissions; Amendment of Parts 21 and 74 of the Commission's Rules with Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico, WT Docket No. 03-66, *et al.*, *Report and Order and Further Notice of Proposed Rulemaking*, FCC 04-135 (rel. July 29, 2004). With respect to 70/80/90 GHz, the Commission elected to issue non-exclusive nationwide licenses conditioned upon site and path-specific coordination. *See* Allocations and Service Rules for the 71-76 GHz, 81-86 GHz, and 92-95 GHz Bands, *Report and Order*, 18 FCC Rcd 23318, 23337-43 ¶¶ 43-60 (2003) (*70/80/90 GHz Report and Order*). Consistent with its decision not to issue exclusive licenses for geographic areas, the Commission did not adopt any area-wide substantial service requirements, deciding instead to require licensees to construct individual links within 12 months after registering them. *Id.* at 23349 ¶ 80.

[238] *See also* Blooston Comments at 16, CTIA Comments at 5, Cingular Comments at 4 n. 11, NRTC Comments at 3-5, Southern LINC Comments at 7, RCA Comments at 8 (but stating that a substantial service requirement should be accompanied by the condition that any areas that remain unserved by a date certain will be returned to the Commission for re-licensing), WCA Comments at 7, Blooston Reply Comments at 7, Southern LINC Reply Comments at 4-6, Sprint Reply Comments at 21-24, WCA Reply Comments at 2, 5, Western Wireless Reply Comments at 9. We note that CTIA, among others, requests clarification that lessees, on behalf of their lessors, may satisfy construction requirements for the licensed spectrum at issue. *See* CTIA Comments at 4-5. The Commission squarely addressed this issue in the *Secondary Markets Report and Order*, stating that licensees using spectrum manager leasing arrangements or long-term *de facto* transfer leasing arrangements may rely upon the activities of their spectrum lessees for purposes of complying with the build-out requirements, but that licensees using short-term spectrum leasing arrangements may not be counted for the purposes of the build-out rules. *See Secondary Markets Report and Order*, 18 FCC Rcd at 20655, 20667, 20676 ¶¶ 114-115, 146, 177; *see also* 47 C.F.R. §§ 1.9020(d)(5) (governing spectrum manager leasing arrangements), 1.9030(d)(5) (governing long-term *de facto* transfer leasing arrangements), 1.9035(d)(3) (governing short-term *de facto* transfer leasing arrangements). Accordingly, provided the leasing arrangement at issue satisfies the conditions and requirements set forth in the *Secondary Markets Report and Order*, a lessee may satisfy the construction obligations on behalf of the licensee. We note, however, that the construction requirements remain a condition of the license and, to the extent a licensee relies upon the activities of its lessee and the lessee fails to engage in those activities, we will enforce the applicable performance or build-out requirements against the licensee, consistent with our existing rules. *See Secondary Markets Report and Order*, 18 FCC Rcd at 20655, 20667 ¶¶ 115, 146.

achieve compliance with the Commission's build-out obligation by providing service to urban areas.[239] Further, current population-specific benchmarks may have the unintended consequence of encouraging several licensees within a particular market to provide coverage to the same populous areas. In order to satisfy its construction obligations and safeguard its license, even a late entrant who is the fourth or fifth competitor in a particular area initially may choose to duplicate existing carriers' footprints while other, more sparsely populated areas may be without such competition or even service at all. With the additional flexibility afforded by a substantial service option, however, licensees will be free to develop construction plans that tailor the deployment of services to needs that are otherwise unmet, such as the provision of service to rural or niche markets. As Southern LINC explains "[w]hile a substantial service alternative, by itself, does not guarantee that all licensees will serve rural areas, the additional flexibility of this alternative undoubtedly improves the likelihood of rural deployment" and "provide[s] licensees with the opportunity to target unserved rural areas."[240] Moreover, providing these licensees with the option of satisfying their construction requirements by providing substantial service in their licensed areas will increase parity among geographic area licensees.[241] This action promotes more equal regulatory footing with respect to construction obligations.

77. We disagree with those commenters who urge the adoption of a substantial service standard only for those licensees with "small geographic territories."[242] Our intent in providing licensees with a substantial service option is not to mandate, but to encourage and facilitate construction in less populated areas by providing licensees with sufficient flexibility to develop unique business plans that do not require ubiquitous coverage or coverage of densely populated areas. In keeping with our market-oriented policies, we do not propose to require licensees to deploy services where their market studies or other analyses indicate that service would be economically unsustainable. NTCA states that a large licensee "may provide service to a 'substantial' portion of the population, while completely ignoring and providing no service to the vast majority of the license territory, *i.e.*, the rural territory."[243] We acknowledge that a licensee might satisfy its construction obligation by providing service to areas where population is densely concentrated; this would be particularly true if we were to agree with NTCA and refuse to allow licensees with large licensed areas to provide substantial service. By limiting the substantial service option to licensees of smaller geographic areas only, we believe that NTCA's suggestion effectively encourages the very thing NTCA seeks to deter: focused coverage of populated areas instead of more rural areas. As we stated earlier, the adoption of the substantial service standard provides licensees with the flexibility to provide coverage to other, less populated areas and still satisfy its coverage requirement without necessarily focusing on more urban population centers.

78. We also decline at this time to follow the recommendations of OPASTCO and RTG, that

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[239] *See Rural NPRM*, 18 FCC Rcd at 20821 ¶ 36.

[240] Southern LINC Reply Comments at 6.

[241] As Southern LINC pointed out, "EA licensees in Channel Blocks A, B, and C, of the 800 MHz SMR band do not currently have a substantial service alternative, even though the FCC adopted this alternative for licensees in Channel Blocks D through V as well as several comparable CMRS services." *See* Southern LINC Comments at 8. *See also* CTIA Comments at 5, Sprint Reply Comments at 23 (noting that extending the substantial service construction alternative to all geographic area wireless licensees would promote regulatory parity).

[242] *See* Blooston Comments at 17, NTCA Comments at 10-11, Blooston Reply Comments at 8-9.

[243] NTCA Comments at 11.

we "abandon" our substantial service performance benchmark in favor of "stricter, more specific build-out obligations, and a 'keep what you use' approach similar to the 'unserved area' licensing regime established for cellular service.[244] OPASTCO and RTG argue that a "keep what you use" approach will provide licensees with an incentive to provide service to rural areas or otherwise provide access to others who are willing to do so.[245] As demonstrated by our trend towards licensing services on a geographic-area basis, we believe that licensees can provide a meaningful and socially beneficial service without providing ubiquitous service and that providing licensees with sufficient flexibility to respond to market fluctuations will promote the public interest. However, we recognize that, for example because they can be used sequentially, market-based mechanisms and re-licensing approaches (such as "keep what you use") are not necessarily mutually exclusive. Accordingly, our *Further Notice* will continue this discussion of the appropriate re-licensing, and construction obligations for current and future licensees who hold licenses beyond their first term.

79. As an additional matter, we adopt safe harbors for providing substantial service to rural areas. As we state earlier in Section III.A, we adopt a default definition of "rural area" as a county with a population density of 100 persons per square mile or less, based upon the most recent Census data. We apply this definition for purposes of these rural-focused substantial service safe harbors. In light of the fact that the geographic area licenses are comprised of counties, we believe it is sensible and administratively efficient to adopt safe harbors for geographic area licenses that also are based upon counties. With respect to mobile wireless services, a licensee will be deemed to have met the substantial service requirement if it provides coverage to at least 75 percent of the geographic area of at least 20 percent of the "rural areas" within its licensed area. With respect to fixed wireless services, the substantial service requirement is met if a licensee constructs at least one end of a permanent link in at least 20 percent of the number of "rural areas" within its licensed area. Licensees may satisfy these construction requirements through lease agreements, provided these arrangements satisfy the conditions set forth in the *Secondary Markets Report and Order*.[246] As we stated in the *Rural NPRM*, the use of a population density of 100 persons or fewer per square mile is derived from our finding in the *Eighth Competition Report*, which indicates that counties with population densities of 100 persons per square mile or less "have an average of 3.3 mobile competitors, while the more densely populated counties have an average of 5.6 competitors."[247] We believe that this population density-based definition provides a workable and reasonable point of differentiation between rural and non-rural areas, as we noted earlier in Section III.A.

80. We believe it is beneficial to adopt these safe harbors because they provide licensees with concrete examples of how they can provide substantial service through specific types of deployment in rural areas, thereby increasing certainty and alleviating concerns that the substantial service

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[244] *See* OPASTCO/RTG Joint Comments at 4.

[245] *See id.* at 5; *see also* NTCA Comments at 10 (arguing that licensees of large service areas should be subject to a "keep what you use" approach).

[246] *See Secondary Markets Report and Order*, 18 FCC Rcd at 20655, 20667, 20676 ¶¶ 114-115, 146, 177; *see also* 47 C.F.R. §§ 1.9020(d)(5) (governing spectrum manager leasing arrangements), 1.9030(d)(5) (governing long-term *de facto* transfer leasing arrangements), 1.9035(d)(3) (governing short-term *de facto* transfer leasing arrangements).

[247] *Eighth Competition Report*, 18 FCC Rcd at 14836 ¶ 114.

requirement is overly vague.[248] We emphasize, however, that these safe harbors do not constitute the only means by which a licensee may provide substantial service. A licensee is therefore free to meet the substantial service test by satisfying one of the safe harbors or providing some alternative coverage to its licensed area, depending upon the individual needs of their consumers or their own unique business plans. We also note that the *Rural NPRM* provided licensees with additional guidance by setting forth a list of factors that we will consider in the context of determining whether a licensee is providing substantial service to rural areas. We affirm that we will consider these factors in evaluating substantial service showings. Specifically, we will look at the following factors: (1) coverage of counties or geographic areas where population density is less than or equal to 100 persons per square mile; (2) significant geographic coverage; (3) coverage of unique or isolated communities or business parks; and (4) expanding the provision of E911 services into areas that have limited or no access to such services.[249] While this list is not intended to be exhaustive or exclusive, we believe it illustrates the sorts of material factors we will consider in any rural substantial service analysis. By adopting substantial service "safe harbors," as well as by providing examples of the sorts of factors we will consider in evaluating substantial service showings, we believe we satisfactorily balance the competing interests of maximizing licensee flexibility while providing some measure of certainty.

81. We decline at this time to introduce a "very rural area" safe harbor[250] or modify our safe harbors to include a population component. We note that several commenters asked that we include a population component to make the safe harbor more meaningful for licensees whose licensed areas include counties with large land areas.[251] These commenters argue that in such circumstances, it may be easier for a licensee to satisfy population requirements instead of the substantial service safe harbor.[252] As we stated above, the safe harbors are not intended to be the only means of providing substantial service. We will take into consideration if a licensee is serving a "very rural area" or a very large geographic area.

82. We also decline to adopt a geographic-based benchmark for all wireless geographic area services that are subject to construction requirements but that otherwise do not have a geographic-specific construction requirement.[253] Only one commenter, Southern LINC, addressed this issue. We note that although Southern LINC supports adoption of a such a geographic-area based requirement, stating that "the geographic-based requirement would give licensees serving only rural/underserved areas

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[248] OPASTCO and RTG state that the "substantial service" standard is "vague and nearly unenforceable" and that "[t]he vagueness of the current 'substantial service' standard will most likely inhibit the deployment of wireless service to rural areas." *See* OPASTCO/RTG Joint Comments at 5.

[249] *See Rural NPRM*, 18 FCC Rcd at 20822-23 ¶ 38.

[250] *See* Blooston Reply Comments at 8 (suggesting adoption of a "very rural area" safe harbor for licensed areas with a population density of less than 10 persons per square mile).

[251] *See* Dobson Comments at 16, Western Wireless Comments at 9-10.

[252] *See id.*

[253] We note that there was some support in the record for this proposal. Southern LINC Comments at 7. As noted above, we believe that licensees will have the freedom to explore these different business strategies in the context of a substantial service construction option.

another way to meet the construction obligation of the licensed area as a whole,"[254] we believe that licensees who wish to provide coverage to a particular geographic portion of their licensed area have the flexibility to do so pursuant to the "substantial service" standard. We conclude, based upon the record in this proceeding, that there is no demonstrated need to modify our regulations in this regard.

83. We also decline to adopt performance requirements for renewed licenses at this time. A large number of commenters oppose the imposition of such requirements. Many indicate that the Commission should not impose any new construction requirements beyond the initial license term.[255] These commenters argue, *inter alia*, that such requirements would disturb licensees' business plans, upset market valuations of licenses, and impose unnecessary and uneconomic construction requirements on licensees who otherwise have appropriate incentives to deploy services where it makes economic sense to do so. Southern LINC states that many licensees "expended vast sums of money at auction with the reasonable expectation that they would retain their licenses after satisfying the applicable performance requirements during the initial license term."[256] While we recognize the concerns of existing licensees regarding future construction requirements, we believe that re-licensing approaches such as "keep what you use" and market-based mechanisms are not necessarily mutually exclusive. While we do not make any such changes at this time, we initiate a *Further Notice* to continue our discussion of various re-licensing approaches and the merits, if any, of construction requirements for current and future licensees holding licensees beyond their first term.

84. We note that although we refrain from adopting renewal term performance requirements at this time, we will continue to examine the state of competition in rural areas and will revisit this decision in the event we observe that licensees cease deploying new services in rural areas and/or that secondary markets are not facilitating sufficient access to spectrum for would-be service rural service providers. We emphasize that, contrary to Sprint's assertions, the Commission retains the right to modify the terms and conditions of FCC licenses.[257] Among other claims, Sprint argues that modifying license renewal rules "cannot be justified under [the] statutory standard" of doing something in the public interest, convenience, and necessity,[258] that "[a] significant change to the renewability of a license purchased at auction would . . . constitute a taking under the Fifth Amendment,"[259] and that "[a] subsequent Commission decision that PCS carriers will lose some or all of their licenses during the renewal period if they do not satisfy new, additional build-out requirements or do not serve certain areas would constitute a major breach of the license contract."[260] The Commission's licensing system has never provided any vested right to specific license terms. Rather, it is well established that the

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[254] Southern LINC Comments at 7.

[255] *See, e.g.*, AT&T Comments at 6-7, CTIA Comments at 6, Cingular Comments at 4, Dobson Comments at 14, 17, Nextel Partners Comments at 18, Southern LINC Comments at 8-9, Blooston Reply at 9, Nextel Partners Reply at 4, Southern LINC Reply at 7, Sprint Reply at 10-14.

[256] Southern LINC Comments at 9.

[257] *See* Sprint Reply Comments at 15-21.

[258] *Id.* at 15.

[259] *Id.* at 20.

[260] *Id.* at 18.

Commission always retains the power to alter the terms of existing licenses by rule making.[261] Further, at the time Congress introduced auctions into the licensing process, it made clear that this mechanism for assigning licenses was not intended to change the Commission's basic regulatory role or otherwise provide additional rights to auction-winning licensees.[262] Thus, no auction bidder could have assumed that it was buying a license containing terms that the Commission could not modify.

2. Increasing Power Limits for Certain Services

85. *Background.* In the *Rural NPRM*, the Commission observed that "[i]ncreasing the range of radio systems is one means of making it more economical to provide spectrum-based radio services in rural areas by potentially lowering infrastructure costs," and that "[o]ne way to increase the range of radio systems is by increasing power levels."[263] The Commission accordingly sought comment regarding whether we should modify our regulations governing power limits for operations in rural areas, as a means of encouraging service to these areas. Specifically, the Commission asked whether current power limits should be increased for stations located in rural areas and licensed under Parts 22, 24, 27, 80, 87, 90, and 101 of our rules.[264] The Commission also sought comment regarding the implementation of higher power limits, such as how to define "rural area" for purposes of increased power limits and whether, in the case of base/mobile systems, both the base and mobile stations must be located within a rural area.[265] The Commission further acknowledged that there may be certain challenges in implementing increased power levels in rural areas and sought comment on how increased power might increase the potential for harmful interference to neighboring systems or otherwise limit the number of paths in a given area.[266]

86. *Discussion.* Based on the record in this proceeding, we believe that, in principle, increasing power limits in rural areas can benefit consumers in rural areas by reducing the costs of infrastructure and otherwise making the provision of spectrum-based services to rural areas more economic. When we balance this potential benefit, however, against the potential costs of harmful interference, we recognize that we must act carefully to ensure that increased power limits do not cause harmful interference for other licensees. After reviewing the record and evaluating the technical and operational rules for the various services at issue in this proceeding, we conclude that increasing cellular, PCS, and AWS power limits may provide measurable benefits without creating harmful interference for co-channel or adjacent licensees. As we discuss in the following paragraphs, we find that the current

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[261] *See, e.g., United States v. Storer Broadcasting*, 351 U.S. 192, 205 (1956); *Committee for Effective Cellular Rules v. FCC*, 53 F.3d 1309, 1319-20 (D.C. Cir. 1995).

[262] *See* 47 U.S.C. §§ 309(j)(6)(C) (stating that nothing in the auction statute or use of auctions shall "diminish the authority of the Commission under the other provisions of th[e Communications] Act to regulate or reclaim spectrum licenses"); 309(j)(6)(D) (stating that nothing in the auction statute or use of auctions shall "be construed to convey any rights, including any expectation of renewal of a license, that differs from the rights that apply to other licenses within the same service that were not issued pursuant to this subsection").

[263] *Rural NPRM*, 18 FCC Rcd at 20829-30 ¶ 52.

[264] *Id.* at 20831 ¶ 56.

[265] *Id.* at 20831-32 ¶ 57.

[266] *Id.* at 20831 ¶ 55.

cellular, PCS, and AWS technical and coordination rules (with some modifications) will be sufficient to ensure that licensees are able to utilize increased power levels at certain base stations without causing harmful interference.

87. ***Cellular***. We amend our regulations governing the Cellular Radiotelephone Service and authorize increased power limits for cellular base stations that either: (1) are located in counties with population densities of 100 persons or fewer per square mile, based upon the most recently available population statistics from the Bureau of the Census; or (2) extend coverage into cellular unserved areas, as those areas are defined in Section 22.949 of the Commission's rules.[267] Specifically, we amend section 22.913(a) of our rules to provide that the Effective Radiated Power (ERP) of such base transmitters must not exceed 1000 Watts.[268] This power increase doubles permissible ERP for selected cellular base stations; prior to this amendment, section 22.913(a) provided that the ERP of base transmitters and cellular repeaters must not exceed 500 Watts.[269] We recognize that a "one size fits all" approach to spectrum management is unlikely to yield optimal spectral efficiency and that, particularly in areas where there is less congestion or where other unique factors are present, it is appropriate to amend our operating parameters to afford licensees greater flexibility. As the Spectrum Policy Task Force noted, "spectrum policy must evolve towards more flexible and market-oriented regulatory models," in order "[t]o increase opportunities for technologically innovative and economically efficient spectrum use."[270] Our action today is consistent with the recommendations of the Spectrum Policy Task Force, which advised that the Commission explore ways of promoting spectrum access and flexibility in rural areas, and stated that the Commission's interference and other technical rules should "afford spectrum users the flexibility to operate at higher power in less congested areas, which are typically rural, so long as such higher power operations do not cause interference and do not receive additional interference protection."[271]

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[267] 47 C.F.R. § 22.949. "Unserved area" is defined as a geographic area that is not within the CGSA of any cellular system authorized to transmit on that channel block. The CGSA is the geographic area served by a cellular system, within which that system is entitled to protection. *See id.*

[268] Note that we are not increasing power limits for cellular base stations that are located in counties with population densities that are greater than 100 persons per square mile, *unless* those base stations are providing coverage to otherwise unserved areas. If a cellular base station is not located in a county with a population density of 100 persons or fewer per square mile, or providing service to an unserved area, the ERP of the cellular base station must not exceed 500 Watts.

[269] 47 C.F.R. § 22.913(a). We note that, to the extent that a power increase results in cellular coverage that extends beyond the licensee's protected CGSA, this additional coverage area does *not* automatically become part of the licensee's CGSA. Cellular carriers must continue to comply with our regulations regarding cellular unserved areas. Cellular carriers may extend coverage into adjacent unserved areas without prior Commission approval, provided that the extension is less than 50 square miles and the Commission is notified of any such extension. Further, any such extension is on a secondary basis only and does not become a part of the licensee's CGSA unless the licensee files a major modification application. *See* Year 2000 Biennial Regulatory Review – Amendment of Part 22 of the Commission's Rules To Modify or Eliminate Outdated Rules Affecting the Cellular Radiotelephone Service and Other Commercial Mobile Radio Services, WT Docket No. 01-08, *Order on Reconsideration*, 19 FCC Rcd 3239, 3256-57 ¶ 41 (2004).

[270] *SPTF Report* at 3.

[271] *Id.* at 59.

88. We believe that this amendment of our regulations governing cellular power limits will promote coverage to rural areas by making it more economical to provide service to these areas. As a result of this power increase, cellular licensees may be able to extend their coverage area and use fewer base stations, thereby lowering their infrastructure costs. As commenters such as OPASTCO/RTG noted, "[r]elaxed limits for licensed operations will provide much-needed relief to rural operators by substantially reducing the costs associated with construction of such systems."[272] We estimate that increasing authorized base station power limits to 1,000 Watts ERP may increase the distance to the licensee's Service Area Boundary (SAB) by as much as 12.5 percent and may increase overall coverage area by as much as 26.6 percent.[273] Consequently, we estimate that, as a result of this power increase, licensees may require up to 21 percent fewer cell sites to provide the same coverage with 1,000 Watts ERP as previously provided with 500 Watts ERP.

89. We limit this power increase to cellular base stations that are located in rural areas or that are providing coverage to unserved areas. We define "rural areas" for purposes of increased power limits as counties with a population density of 100 persons per square mile or less. Specifically, permitting power increases in areas where the population density is 100 persons or less captures much of the geographic area where service is not provided by both the A- and B-block cellular carriers (or, in some instances, by either cellular carrier). After conducting an analysis of current cellular licenses in the United States, we have determined that there are 625 counties that have some area that is not covered by the license of an A-block and/or B-block cellular provider. Of these 625 counties, 577 of these counties have a population density of 100 persons per square mile or less.[274] As an additional matter, in order to promote cellular coverage to areas that lack cellular service but otherwise are not captured by this definition of "rural area," we amend our rules to permit carriers to use higher power at base stations located in counties with a greater population density, provided those base stations are providing coverage to unserved areas, as defined by our rules.[275] We also limit this power increase to cellular base stations more than 72 kilometers (45 miles) from the Mexican and Canadian borders, consistent with our current

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[272] OPASTCO/RTG Comments at 6-7; *see also* Blooston Comments at 18 (generally supporting increased power levels and stating that "[a] major consideration in any rural system design is cost"); *see also* Ericsson Reply at 6 (stating that increased power limits "would improve service and coverage areas without requiring as many base stations, thus improving economic feasibility of such systems"); *see also* National Rural Telecommunication Comments at 6 (stating that "increasing the range of radio systems through increased power levels is one means of making it more economical to provide spectrum-based radio services in rural areas"); *see also* RCA Comments at 9.

[273] These calculations are based on our standard formula for determining the distance from a cell transmitting antenna to the SAB, as set forth in section 22.911(a) of our rules. *See* 47 C.F.R. § 22.911(a).

[274] We note that, of these 577 counties, 536 are located within RSAs. We adopt a definition of "rural area" based on population density, rather than adopting an alternative definition such as RSAs, because this population density-based definition captures a greater percentage of the area where consumers do not have coverage by the A- and/or B-block cellular provider.

[275] *See* 47 C.F.R. § 22.99. As we state earlier, cellular carriers must continue to comply with our unserved area rules. *See supra* ¶ 89. An extension into adjacent unserved areas is permitted without prior Commission approval, provided the Commission is notified and the extension is less than 50 square miles. These extensions are on a secondary basis. A licensee must file a major modification application if it would like to incorporate this new area into its CGSA.

agreements with those countries.[276]

90. We note that commenters expressed concern that higher power limits might result in harmful interference to other licensees.[277] Some commenters urged the Commission to conduct interference studies[278] or otherwise "further investigate the possibility of increasing power levels in rural areas, in a manner that responsibly addresses any potential interference concerns."[279] Further, some commenters urged the Commission to refrain from increasing power limits due to the potential for harmful interference or other detrimental effects on other services.[280] We have carefully considered the concerns raised by commenters and believe that this limited amendment of our cellular rules will increase licensee flexibility without increasing the likelihood of harmful interference. Our regulations governing the provision of cellular service already contain specific safeguards that are designed to minimize the likelihood of harmful interference by clearly defining protected service areas for each cell site, and requiring licensee coordination near system boundaries. We find that applying these same requirements to higher power base stations will minimize the potential for harmful interference. Specifically, the Service Area Boundary (SAB) of each cellular base station is defined by a formula based on antenna height and transmitter power, and the formula's underlying assumptions are still valid for power levels up to 1000 Watts.[281] Using the existing formula, the SAB distance for a particular base station will increase as the power level increases. However, because the rules prevent a base station SAB from overlapping other licensees' CGSAs, such power increases will only be permitted so long as they do not infringe upon other licensees' systems.[282] One example of how increased power may be utilized under these restrictions is where a licensee seeks to extend service into currently unserved areas. Because the areas are unserved by other carriers, the SAB increase will not overlap any other licensee's CGSA. Another example could be where a carrier wishes to improve service quality by increase signal levels within their own CGSA. In other words, the SAB increase for the particular base station would be completely within the licensee's CGSA, and therefore would not infringe upon other licensees' CGSAs.

91. As an additional safeguard, the Commission's rules currently provide that licensees must coordinate channel usage at each transmitter location within 75 miles of any transmitter locations authorized to other licensees or proposed by tentative selectees or other applicants.[283] This requirement

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[276] 47 C.F.R. §§ 22.955 and 22.957.

[277] *See* ITA Reply Comments at 9; *see also* Western Wireless Reply Comments at 11; *see also* Nextel Partners Reply Comments at 14 (stating that limits on power levels should not be relaxed in rural areas, due to interference issues).

[278] ITA Reply Comments at 9.

[279] CTIA Comments at 10.

[280] For example, Nextel Partners stated that "[h]igher power limits result in greater potential interference, less potential for re-use of spectrum in adjacent or nearby areas, and, for higher-powered handsets, systematic problems that may arise when such handsets are transported to an urban environment." *See* Nextel Partners Comments at 19.

[281] 47 C.F.R. § 22.911(a).

[282] *Id.* § 22.911(d).

[283] *See id.* § 22.907(a). Licensees are not obligated to coordinate with other mutually exclusive applicants. *Id.*

recognizes that the SAB/CGSA overlap restriction described above permits licensees to provide service quality signal levels up to the edge of another licensee's system boundary. While this approach facilitates seamless coverage for consumers, it requires careful coordination among neighboring licensees in order to avoid interference. For years licensees have been coordinating system frequency plans with one another in order to ensure high levels of service quality and seamless roaming along system boundaries. Going forward, we believe this coordination requirement will perform equally well in coordinating high power operations.

92. Our decision here to authorize higher power levels for cellular licensees, subject to certain safeguards to protect other cellular services does not diminish in any way the obligations we impose today on cellular licensees in the *800 MHz Order* to protect public safety and other non-cellular operations in the adjacent 800 MHz band from interference.[284] As explained in detail in that Order, we adopt a specific standard defining "unacceptable interference" to such operations in that band and require other licensees, including cellular licensees, to immediately take all steps necessary, including the implementation of Enhanced Best Practices, to abate such interference.[285] Cellular licensees wishing to utilize the increased power levels authorized in this Order can do so only to the extent that they also remain in compliance with their *800 MHz Order* obligations.

93. Several commenters stated that increased power limits would not necessarily facilitate increased coverage due to handset limitations or other technical constraints.[286] The Commission acknowledged this concern in the *Rural NPRM*, stating that "increasing the base station power level may not improve the communications range unless the mobile unit [or handset] is capable of returning a signal to the base station antenna."[287] Although increasing the power of the handset might address this issue by increasing the mobile unit's ability to "talk" to the base station, several commenters indicated that increasing handset power would be problematic, in light of the fact that a handset is likely to be used in urban as well as rural areas and might introduce interference concerns if used in an urban setting.[288] We agree with these commenters and find that there is no need to increase handset power limits at this time. We do not believe that increasing handset power is necessary, however, in order for cellular licensees to benefit from increased power limits. First, nearly all cellular phones on the market today operate at power levels well under the maximum permitted under our rules, which suggests that our regulations already permit sufficient handset power. Today's handsets generally utilize low power in order to

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[284] Improving Public Safety Communications in the 800 MHz Band Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels, WT Docket No. 02-55, *Report and Order, Fourth Report and Order, Memorandum Opinion and Order, and Order*, FCC 04-168 (rel. August 6, 2004) (*800 MHz Report and Order*). Public safety receivers operate in the 806-824 MHz and 851-869 MHz bands. We note that these bands are not, in their entirety, allocated for public safety use. Public safety systems have exclusive use of channels in the 821-824 MHz 866-869 MHz band segment and share channels with other services in the 809.75-816 MHz /854.75-861 MHz band segment. *See also* Improving Public Safety Communications in the 800 MHz Band; Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels, WT Docket No. 02-55, *Notice of Proposed Rulemaking*, 17 FCC Rcd 4873 (2002) (*800 MHz NPRM*).

[285] *See* generally *800 MHz Report & Order* at ¶¶ 19, 88-132.

[286] *See* Blooston Comments at 18; *see also* ITA Comments at 9; *see also* Western Wireless Reply Comments at 11.

[287] *Rural NPRM*, 18 FCC Rcd at 20830 ¶ 52.

[288] *See* Nextel Partners Reply Comments at 14; *see also* CTIA Comments at 9.

comply with our RF safety rules and to extend battery life. Second, cellular licensees may overcome handset constraints by employing an external means of boosting the handset's signal, or by adding amplifiers at the base station to boost the received signal. For example, a cellular carrier may use an external amplifier or otherwise use a tower top amplifier at the base station. In any case, cellular technology continues to develop and we expect that technical limitations may diminish over time as technology evolves. Further, our action affords licensees with additional flexibility to take advantage of new technological advancements without being unduly constrained by Commission requirements.

94. In addition, we note that some wireless carriers are considering the use of directional antennas to improve network performance,[289] and that such antennas have the potential to help improve communications in rural areas by achieving higher gain, mitigating the effects of multipath, improving frequency bandwidth performance, and providing better directional control over emissions.[290] As such, directional handset antennas would provide improved reception quality at the cellular tower receiver, significant improvement of voice quality near the edge of a cell, potentially larger cell sites with fewer base stations, and lower power consumption in handsets, improving battery life.[291] Although handsets that employ directional antennas may need to be slightly reoriented when used in certain locations, techniques such as antenna diversity are being considered to combat large-scale fading effects caused by shadowing from large obstacles (*e.g.*, buildings or other terrain features).[292] Because directional handset antennas have the potential to significantly increase the strength of signals transmitted from handsets, as well as provide efficiency benefits both to the wireless network and to battery life, there are several benefits that could be gained from their increased use in handsets.[293] Importantly, directional handset antennas, coupled with an increase in base stations' transmitted power, have the potential to significantly improve wireless communications in many rural areas.

95. ***Broadband PCS.*** Similar to our treatment of cellular above, we will provide for increased power limits for broadband PCS.[294] Specifically, we increase power levels by 100 percent for

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[289] Some carriers are considering deploying directional phone and base stations antennas in so-called "diversity schemes" in order to improve wireless system performance and reduce the number of base stations needed. *See* D. McDonough, Jr., "Building a Better Wireless Antenna," *Wireless News Factor,* June 5, 2002 (visited June 9, 2004) <http://www.skycross.com/WNF_06052002.asp>. *See also* C. Beckman, "Development Trends in Antennas for Mobile Phones," Portable 2001 Conference, February 13-15, 2001, San Jose, CA (visited June 9, 2004) http://www.s3.kth.se/signal/edu/seminar/01/Portable2000.pdf>; J. H. Winters, "Smart Antennas for Wireless Systems," *IEEE Personal Communications,* February 1998 at 23-27; F. Viquez, "Smart Antenna Deployment in Next-Generation Wireless Systems" (visited June 9, 2003) <http://www.base-earth.com/march-april2002/allied.html>.

[290] *See Rural NPRM,* 18 FCC Rcd at 20829-30 ¶ 52.

[291] *See* F.M. Caimi, Ph.D., Senior Scientist, "MLA Antennas – Physically Small, Electrically Large," Skycross, Inc., 2003 (visited June 9, 2004) <http://www.skycross.com/MLA_antenna.asp>.

[292] *See* A.J. Paulraj, D. Gesbert, C. Papadias, "Smart Antennas for Mobile Communications," *Paulraj, Gesbert, Papadias Encyclopedia for Electrical Engineering,* John Wiley Publishing Co., 2000, available at <http://heim.ifi.uio.no/~gesbert/papers/encyclopedia_chapter.pdf> (visited Mar. 5, 2003).

[293] Of course, manufacturers would still need to comply with the RF safety rules contained in Part 2 of the Commission's rules. *See* 47 C.F.R. Part 2, Subpart J, of the Commission's rules.

[294] *See* 47 C.F.R. § 24.232.

broadband PCS base stations located in rural areas, in parity with the cellular power levels adopted in this proceeding. We note that broadband PCS power levels are tied to antenna heights, so that the authorized power for a given broadband PCS base station would vary, depending upon the accompanying antenna height.[295] For example, a base station with an antenna with a height above average terrain (HAAT) of 300 meters or less may operate at a maximum of 1640 watts peak equivalent isotropically radiated power (EIRP). Thus, for base stations of 300 meters or less in rural areas, we will allow an increase from 1640 to 3280 watts EIRP.

96. As with the modification of our cellular regulations, we believe that this modification of our PCS regulations will allow licensees to increase their coverage while using fewer base stations, thereby reducing the costs of providing service to rural areas. We estimate that permitting broadband PCS licensees to increase their power by 100 percent will increase the distance from the base station to the edge of their coverage area by 17 percent and will increase the overall coverage area by 36 percent.[296] As a result, we estimate that a broadband PCS licensee using increased power will require 27 percent fewer sites in order to provide the same coverage provided using current power limits.

97. We find that the current market-boundary signal strength limit, in conjunction with a coordination requirement, will minimize the potential for harmful interference among licensees. Currently, broadband PCS licensees cannot exceed a signal strength of 47 dBμV/m at their geographic market-boundary unless neighboring licensees agree to a higher level.[297] This means that, regardless of the location, height, or power level of broadband PCS base stations, the signal level at the market-boundary may not exceed this maximum level without mutual agreement. Therefore, we find that permitting a 100 percent increase in power levels at broadband PCS base stations will not increase the potential for harmful interference beyond what exists today. At the same time, we note that the 47 dBμV/m limit is a "service quality" signal level that promotes coverage up to the edge of the market boundary, and seamless roaming across market boundaries in certain instances. In other words, although there is no formal coordination requirement, neighboring licensees must as a practical matter coordinate frequency plans and site locations along market boundaries in order to avoid interference. As a cautionary measure, we will require that licensees using higher power levels coordinate operations with all licensees within 75 miles of the relevant base station. This requirement will supplement the existing signal strength limit and underscore our intention that licensees must coordinate spectrum usage along

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[295] We are revising Section 24.232 to provide 100 percent power increases as a function of height as follows: for antennas of 300 feet increase from 1640 to 3280 watts, for antennas of 500 feet increase from 1070 to 2140 watts, for antennas of 1,000 feet increase from 490 to 980 watts, for antennas of 1500 feet increase from 270 to 540 watts, and for antennas of 2,000 feet increase from 160 to 320 watts.

[296] We based these calculations on a theoretical system placed in rural, western Kansas. We utilized the Okumura-Hata propagation model assuming a 1900 MHz PCS base transmitter, flat terrain, average height AMSL of 230 m, open clutter, omni-directional antennas (9 dBd gain), antenna centerline (all sites) of 60 m AGL, mobile height of 3m, received signal level of –102 dBm, and mobile power of 0.8 watts EIRP. The Okumura-Hata propagation model makes use of numerous correction factors, including adjustments for the degree of urbanization, terrain slope and roughness, receiver location relative to nearby hills and valleys, general street orientation in the service area, and localized obstructions. *See* Okumura, Y., E. Ohmori, T. Kawano, and K. Fukuda, "Field strength and its variability in VHF and UHF land-mobile radio service," *Rev. Elec. Com. Lab.* 16 at 825-73 (Sep./Oct. 1968)) *and* M. Hata, "Empirical formula for propagation loss in land mobile radio services," *IEEE Trans. Veh. Techol.*, vol 29, pp. 317-325, Aug. 1980.

[297] 47 C.F.R. § 24.236.

common boundaries. We note that this power increase applies only to broadband PCS base stations, and not to mobile units.[298] For the reasons stated above for the 800 MHz cellular service, we find that there is not reason to increase mobile power levels at this time.

98. We also note that the Commission is taking steps to address interference concerns more generally and that these additional measures might protect other licensees from harmful interference.[299] We are optimistic that these initiatives might effectively address interference concerns in a flexible manner and alleviate the need to impose detailed, service-specific coordination requirements.

99. Finally, as we did with 800 MHz cellular, we limit this power increase to broadband PCS base stations located in counties with population densities of less than 100 persons per square mile and those located more than 75 miles from the Mexican and Canadian borders. As stated above, we find that a majority of areas likely to be unserved or underserved are located in such counties. Further, because our existing agreements with Mexico and Canada are based on the prior maximum power limits, we retain those limits for border areas.[300]

100. ***AWS***. In the *AWS Report and Order*, the Commission adopted the PCS power limit of 1640 watt EIRP for AWS base stations. The Commission noted, however, that the *Rural NPRM* had proposed an increase in the power limit for PCS operations in rural areas and indicated that, in the event we adopted higher power limits for PCS services, we would "explore the possibility of similar power increases for AWS."[301] Thus, similar to our treatment of cellular and broadband PCS above, we will

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[298] We retain the current 2 watts EIRP limit for broadband PCS mobile and portable units. *See* 47 C.F.R. § 24.232(b).

[299] *See* Interference Immunity Performance Specifications For Radio Receivers, ET Docket No. 03-65, Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television, MM Docket No. 00-39, *Notice of Inquiry*, 18 FCC Rcd 6039 (2003) (*Receiver Performance NOI*) (a proceeding that considers incorporation of receiver interference immunity performance specifications in its spectrum policy). In the *Receiver Performance NOI*, the Commission stated that, "[i]n many cases, the effects of RF interference can be mitigated or eliminated through attention to receiver hardware design and signal processing software." *Id.* at 6042 ¶ 10. In addition, the Commission also recently initiated a proceeding that seeks comment on a potential new way to assess interference among different services, called "interference temperature." *See* Establishment of an Interference Temperature Metric to Quantify and Manage Interference and to Expand Available Unlicensed Operation in Certain Fixed, Mobile And Satellite Frequency Bands, ET Docket No. 03-237, *Notice of Inquiry and Notice of Proposed Rulemaking*, 18 FCC Rcd 25309 (2003). As the Commission noted in that proceeding, "[t]his new approach could provide radio service licensees with greater certainty regarding the maximum permissible interference, and greater protections against harmful interference that could be present in the frequency bands in which they operate." *Id.* at 25310 ¶ 1.

[300] Interim Sharing Arrangement Concerning the Use of the 1850 to 1990 MHz Band for Personal Communications Services along the United States and Canadian Border, Nov. 14, 1994, Industry Canada-Federal Communications Commission, 4.2 (agreeing to require coordination of all PCS systems within 120 km (75 miles) of border), http://www.fcc.gov/ib/sand/agree/files/can-nb/pcs-bb.pdf ; Protocol Concerning the Use of the Band 1850-1990 MHz for Personal Communications Services along the United States and Mexican Border, 4.2(agreeing to require coordination of all PCS systems located within 72 km (45 miles) of the border), http://www.fcc.gov/ib/sand/agree/files/mex-nb/pcs1850e.pdf.

[301] Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, WT Docket No. 02-353, *Report and Order*, 18 FCC Rcd 25162, 25202 ¶ 102 n. 265 (2003) (*AWS Report and Order*).

provide for increased power limits for AWS. Specifically, we increase power levels for AWS base stations located in rural areas by 100 percent, or up to 3280 watts EIRP in parity with the cellular and broadband PCS power levels adopted in this proceeding.

101. As with the modification of our cellular and broadband PCS regulations, we believe that this modification of our AWS regulations will allow licensees to increase their coverage while using fewer base stations, thereby reducing the costs of providing service to rural areas. We estimate that increasing authorized base station power limits to 3280 Watts EIRP may increase the distance to the licensee's edge of coverage by as much as 17 percent and may increase overall coverage area by as much as 36 percent.[302] Consequently, we estimate that, as a result of this power increase, licensees may require up to 27 percent fewer cell sites to provide the same coverage with 3,280 Watts EIRP as previously provided with 1640 Watts EIRP. We estimate that permitting AWS licensees to increase their power by 100 percent will increase the distance from the base station to the edge of their coverage area in an amount similar to broadband PCS, thereby requiring fewer sites in order to provide the same coverage provided using current power limits. As with broadband PCS, we find that the current market-boundary signal strength limit[303], in conjunction with a coordination requirement, will minimize the potential for harmful interference among AWS licensees, and licensees in neighboring bands.[304] Therefore, as a cautionary measure, we will require that licensees using higher power levels coordinate operations with all affected licensees within 75 miles of the relevant base station and with certain satellite entities.[305] As with broadband PCS, this requirement will supplement the existing signal strength limit and underscore our intention that licensees must coordinate spectrum usage along common boundaries. We note that this power increase applies only to AWS base stations, and not to mobile units. For the reasons stated above for the 800 MHz cellular service, we find that there is not reason to increase mobile power levels at this time. Finally, as we did with broadband PCS, we limit this power increase to AWS base stations located in counties with population densities of less than 100 persons per square mile. As stated above, we find that a majority of areas likely to be unserved or underserved are located in such counties.

102. ***Other Radio Services.*** At this time we will not adopt increased power levels in other radio services. We note that several commenters opposed increases in power limits or otherwise expressed concern with respect to changes to specific service rules. For example, XM Radio Inc. asked the Commission "to refrain from taking any action . . . to increase the power limits of 2.3 GHz [Wireless

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[302] *See supra* note 297.

[303] 47 C.F.R. § 27.55.

[304] AWS base stations will transmit in the 2110-2155 MHz band, which currently contains Part 101 fixed, point-to-point microwave and Part 21 MDS operations. Furthermore, the spectrum below the 2110-2155 MHz band contains various satellite services, as well as Broadcast Auxiliary Service (BAS), which is licensed under Part 74 of our rules, and Cable Television Relay Service (CARS) operations, which is licensed under Part 78 of our rules. The spectrum above the AWS frequencies, the 2155-2160 MHz band, contains Part 21 MDS operations.

[305] At present, AWS licensees already must coordinate with nearby, incumbent co-channel and adjacent channel Part 101 and MDS licensees. Due to concern about the possibility of both out-of-band emission (OOBE) and receiver overload interference from AWS base stations to BAS and CARS operations, the Commission also has decided that AWS licensees must coordinate their operations with affected BAS and CARS licensees. In addition to these existing coordination requirements, higher power AWS operations must also be coordinated with adjacent channel AWS licensees, Part 21 MDS licensees operating above 2155 MHz, as well as all Government and non-Government satellite entities operating in the 2025-2110 MHz band.

Communications Services] facilities,"[306] noting that no commenter has expressly supported a power increase for these facilities and that "no entity has made a showing that authorizing an increase in the power of 2.3 GHz WCS facilities in rural areas will not cause harmful interference to [Satellite Digital Audio Radio Service] repeaters."[307] Similarly, HNS expressed concern with respect to increasing power for those terrestrial wireless services that share spectrum with satellite operations.[308] We note that many bands are shared by fixed terrestrial and satellite operations on a coordinated basis and allowing increased power for existing operations could foil the coordinated sharing situation.[309] In light of the fact that we did not receive supporting comments by those who would stand to benefit from such power increases, we decline to modify power levels for: (1) 2.3 GHz WCS facilities; or (2) licensed terrestrial services that operate in frequency bands that are shared by satellite services.

103. We also decline MDS America's request that the Commission adopt higher power limits and increased operating parameters for the Multichannel Video Distribution and Data Service (MVDDS).[310] First, the Commission expressly excluded MVDDS stations licensed under Part 101 from the scope of its power limits inquiry, noting that the Commission recently increased power levels for all MVDDS stations in a separate proceeding.[311] Second, we agree with commenters that MDS America's request constitutes a late-filed petition for reconsideration of this prior Commission action.[312] Furthermore, we decline to take any action with respect to unlicensed services in this proceeding. We will incorporate comments addressing power limits for unlicensed services into the record of the Cognitive Radio NPRM and will respond to these comments in the context of that proceeding.[313]

104. In conclusion, we decline to adopt increased power limits for any of the other radio services for which we sought comment in the *Rural NPRM*, due to lack of support in the record. We note, however, that licensees in these services may file a request for waiver of these power limits. We will entertain waiver requests on a case-by-case basis. Any such waiver request should demonstrate how a waiver of our power limits will promote the public interest. In addition, licensees seeking to obtain a waiver of our power limits must adequately address any potential interference concerns that may arise as a result of such increased power.

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[306] XM Reply Comments at 3.

[307] *Id.* at 2.

[308] *See* HNS Reply Comments at 3-5.

[309] At the same time, we believe that new fixed terrestrial operations may be able to be coordinated into a rural area with increased power, if necessary, without impacting existing satellite operations.

[310] *See* MDS America Comments at 2-8.

[311] *See Rural NPRM*, 18 FCC Rcd at 20831 n. 119 (citing Amendment of Parts 2 and 25 of the Commission's Rules To Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range; Amendment of the Commission's Rules To Authorize Subsidiary Terrestrial use of the 12.2 – 12.7 GHz Band by Direct Broadcast Satellite Licensees and their Affiliates; and Applications of Broadwave USA, PDC Broadband Corporation, and Satellite Receivers, Ltd. To Provide a Fixed Service in the 12.2 – 12.7 GHz Band, *Fourth Memorandum Opinion and Order*, 18 FCC Rcd 8428 (2003)).

[312] *See* DIRECTV Reply Comments at 3, Skybridge Reply Comments at 2.

[313] *See Cognitive Radio NPRM* at ¶¶ 36-47.

3. Infrastructure Sharing

105. *Background.* The *Rural NPRM* sought comment on whether clarifying the Commission's policy on infrastructure sharing may promote service in rural markets.[314] The Commission also stated that certain carriers in the United States have entered into sharing arrangements,[315] and sought comment on the extent to which infrastructure sharing would promote service in rural areas and on the costs and benefits associated with such arrangements in the context of competition.[316] Infrastructure sharing offers the potential for wireless service providers to share facilities and other infrastructure in order to provide spectrum-based services on a more cost-effective basis, including service to rural areas.[317] A key objective underlying such arrangements is the possible reduction in costs of capital construction in rural areas,[318] and the creation of opportunities for enhanced and expanded coverage.[319] A number of infrastructure sharing arrangements have been entered into in the United States, and some of the parties to such transactions have claimed that these lead to lower costs associated with expanded geographic coverage.[320] Generally, because there are fewer providers in rural areas than in more populated areas, infrastructure sharing may permit more providers to operate in rural areas and thus encourage more competitors to enter those markets.[321]

106. As noted in the *Rural NPRM*, infrastructure sharing includes sharing of infrastructure-related equipment, including antennas, towers, and network elements such as switches and nodes.[322] Commission rules and policies, including our environmental rules,[323] have enabled the sharing of towers and other antenna support structures for the provision of spectrum based services by multiple service providers. Moreover, the Commission has both facilitated and encouraged the collocation of antennas on existing towers.[324] Existing operators have taken advantage of these policies to enter into tower sharing

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[314] *See Rural NPRM*, 18 FCC Rcd at 20849-53 ¶¶ 100-08.

[315] *Id.* at 20849-50 ¶ 101.

[316] *Id.* at 20851 ¶¶ 106-107

[317] *See id.* at 20849 ¶ 100.

[318] *Id.*; RCA Comments at 14, NTCH Comments at 2-3, CTIA Comments at 15, Western Wireless Reply Comments at 10. *See also* T-Mobile Reply Comments at 3 (commenting on potential cost efficiency).

[319] *Cf.* CTIA Comments at 15-16, RCA Comments at 14.

[320] *See Rural NPRM*, 18 FCC Rcd at 20849-50 ¶ 101 (citing *Eighth Competition Report*, 18 FCC Rcd at 14808 ¶ 46) (identifying AT&T Wireless/Sprint agreement to cooperate in the construction of new wireless towers).

[321] *See Rural NPRM*, 18 FCC Rcd at 20850-51 ¶ 104.

[322] *Id.* at 20849 ¶ 100.

[323] *See* 47 CFR § 1.1306 n. 1 (providing that "[t]he use of existing buildings, towers or corridors is an environmentally desirable alternative to the construction of new facilities and is encouraged.").

[324] *See* Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, executed by the FCC, the National Conference of State Historic Preservation Officers, and the Advisory Counsel for Historic Preservation (Mar. 16, 2001), published at 66 Fed. Reg. 17554 (Apr. 2, 2001) (*Antenna Collocation Programmatic Agreement*)

(continued....)

arrangements.[325] Indeed, some companies have made a business of constructing and maintaining towers on which multiple licensees can locate their transmitters and receivers.[326]

107. In addition to these infrastructure sharing arrangements, parties may also be able to expand or improve service to rural areas through spectrum leasing arrangements – whereby licensees in effect share the use of their licensed spectrum with spectrum lessees – under the policies, rules, and procedures established in the *Secondary Markets* proceeding.[327] In the *Secondary Markets Report and Order*, the Commission established policies and rules to enable spectrum users in most wireless radio services to gain access to licensed spectrum by entering into different types of spectrum leasing arrangements with licensees, and streamlined its approval procedures for license assignments and transfers of control.[328] Also, in the companion *Secondary Markets Second Report and Order*, we clarify that spectrum leasing parties may enter into a variety of dynamic leasing arrangements in which licensees and spectrum lessees share the use of the same licensed spectrum.[329]

108. Depending on their structure, infrastructure sharing arrangements may raise transfer of control considerations under Section 310(d) of the Communications Act, as amended.[330] Under that statute, prior Commission approval is required to transfer control of or assign licenses (or parts of licenses, where permitted) to third parties. For many licensees in the wireless radio services, the Commission has interpreted Section 310(d) *de facto* control requirements pursuant to its *Intermountain Microwave* decision,[331] which focuses on whether the licensee, as opposed to an unlicensed third party, exercises close working control over different aspects of the operation of the station facilities that use the spectrum. Specifically, the Commission applied six factors for determining who has *de facto* control by examining whether a licensee: (1) has unfettered use of all station facilities and equipment; (2) controls

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(stating that "the FCC encourages collocation of antennas where technically and economically feasible, in order to reduce the need for new tower construction.").

[325] *See Eighth Competition Report*, 18 FCC Rcd at 14808 ¶ 46 (identifying AT&T Wireless/Sprint agreement to cooperate in the construction of new wireless towers); *Rural NPRM*, 18 FCC Rcd at 20849-50 ¶ 101.

[326] *See, e.g.*, "Crown Castle International, Products & Services, Towers & Rooftops," < http://www.crowncastle.com/services/sites/rooftop.shtml> (tower builder discussing benefits from building one structure or site that can be shared by multiple users); "American Tower Corporation, Services," http://www.americantower.com/mainweb/colocation.asp> (tower builder stating that collocation is available through leasing for carriers faced with increased capital costs and the need for speedy access to markets). In addition, antenna structure owners are ultimately responsible for compliance with the Commission's rules regarding antenna structure registration, painting and lighting of the structures. See 47 C.F.R. §§ 17.2(c), 17.4, 17.6.

[327] *See generally Secondary Markets Report and Order*, 18 FCC Rcd at 20604.

[328] *See id.* at 20607-85 ¶¶ 1-203.

[329] *See Secondary Markets Second Report and Order* at ¶¶ 10-84.

[330] 47 U.S.C. § 310(d).

[331] *Intermountain Microwave*, 12 FCC 2d 559 (1963).